# NAVAL POSTGRADUATE SCHOOL
## Monterey, California

# THESIS

**WEB-BASED NETWORK MANAGEMENT CONFIGURATION FOR THE INDONESIAN EASTERN FLEET WIDE AREA NETWORK**

by

Halomoan Sipahutar

March 2001

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# WEB-BASED NETWORK MANAGEMENT CONFIGURATION FOR THE INDONESIAN EASTERN FLEET WIDE AREA NETWORK

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Submitted in partial fulfillment of the
requirements for the degree of

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# ABSTRACT

This thesis presents a model of an integrated wide area network using web-based network management to support fleet operations of the Indonesian Eastern Fleet. It surveys possibilities for improving the Indonesian Eastern Fleet's computer communications network systems to provide a fast, reliable, and effective way of gathering and distributing information to all fleet units. A standardized LAN infrastructure and the use of an appropriate network hardware and software was recommended to achieve connectivity of all main naval base LANs in an integrated WAN. This thesis provides a design of the Indonesian Eastern Fleet WAN that was tested using a leading edge simulation tool, EXTENDv4. A feasible sized WAN communication architecture was modeled utilizing scaling techniques, which simulated the operation of the Indonesian Eastern Fleet WAN that linked six Fast Ethernet LANs configuration in a one worksheet PC wide screen. A reliable wide area network design using ISDN 128 Kbps and T1 line 1.544 Mbps has been proved in this thesis by executing tests and simulation runs using EXTENDv4 software simulation program.

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# I. INTRODUCTION

## A. BACKGROUND

The Indonesian Navy consists of integrated weapon systems that include warships, aircraft, naval bases and Marines. The responsibility of the Indonesian Navy is vast, and encompasses 17,506 Indonesian islands widely scattered from west to east. Indonesia has 1,222,466 square miles of sea area and 782,665 square miles of land area inside the unified archipelago country. The Indonesian Navy has two fleets: the Indonesian Western Fleet, responsible for the western region of Indonesia's sea territory, and the Indonesian Eastern Fleet, responsible for the eastern region of Indonesia's sea territory.

Computer communication network in the Indonesian Eastern Fleet are supported from the four main naval bases: Surabaya, Ujung Pandang, Bitung, and Jayapura, which are designed to connect remote naval bases and all naval units dispersed through the entire eastern region. Information systems play an important role in enabling the Indonesian Navy to execute fleet operations all over the country. The Indonesian Eastern Fleet has identified that improvements in its information systems especially its network infrastructure and connectivity are required in order to obtain an effective and efficient naval fleet. The Indonesian Eastern Fleet Network has communication system resources such as telephone, radio-link, microwave-link and satellite systems. Those existing communication system resources are still not linked for optimal data communication exchange to computer systems in local area networks (LANs) or in an integrated wide area network (WAN). This thesis will recommend a method for implementing an

integrated wide area network using web-based network management to utilize the existing computer communication systems in the Indonesian Eastern Fleet.

The arrival of the information age has led to an explosion of distributed users, databases and communications networks in the military sector as well as in the commercial sector. Computer networks today have evolved into complex and often tangled systems. The primary reasons for networking computers are to share information, to share hardware and software, and to centralize administration and support. Effective local area networks (LANs) and an integrated wide area network (WAN) are required to achieve connectivity of the Indonesian Eastern Fleet Network.

Organizations adopting LANs and WANs must also adopt clear techniques and tools to tame these beasts. The organizations that become over reliant on their networks could experience devastating results if down time were encountered. The network administrator's job has become increasingly critical to manage and control the operation of the network. Network management can be defined as the processes and techniques that ensure an organization's network is operating properly and efficiently. The Indonesian Eastern fleet requires the appropriate system to manage and control its network. The implementation of a web-based network management appears to be well suited to support the Indonesian Eastern Fleet's missions and operations. There is a wealth of knowledge that can be effectively captured and transferred wherever needed within the Indonesian Eastern Fleet Network.

## B. PURPOSE

The objective of this thesis is to present a model of an integrated wide area network using web-based network management to support fleet operations of the

Indonesian Eastern Fleet. It surveys possibilities for improving computer communications systems to provide a fast, reliable, and effective way of gathering and distributing information to all fleet units. This thesis recommends a standardized LAN infrastructure and the use of common network hardware and software to support web-based network management of the Indonesian Eastern Fleet Network. It reviews current technologies and provides an assessment for future use.

## C. SCOPE AND THE ORGANIZATION OF THE STUDY

The scope of this thesis is limited to the following:

- A review of computer and communications networks, and a study research in designing the Indonesian Eastern Fleet Wide Area Network
- An in-depth review of web-server-based technology and Internet Information Server (IIS) 5.0
- An in-depth review of network management and security
- An evaluation of how computer and communications networks using web-based network management can be used effectively to support successful fleet operations
- Web-Based Wide Area Network design using the EXTEND-4 simulation software program

## D. METHODOLOGY

The methodology used in this research consists of the following steps:

- Conduct an in-depth search and review of available books, magazine articles, documents, and other library information resources regarding computer networking, web-server technology, network management, and information technology management to acquire the ability to propose a successful information technology strategy
- Develop and administer a user requirements study
- Conduct a search of the Internet and websites for information from military and commercial sources

## E. THESIS OUTLINE

This section provides an outline of the different parts of this thesis that explores the general concept of web-based network management and the specific client application

for improving the computer communication network systems in the Indonesian Eastern Fleet.

Chapter I: Introduction – provides a brief description of the development of computer communication systems in the Indonesian Eastern Fleet, the object of this thesis, and the organization of the study.

Chapter II: Problem Definition - describes the need for connectivity in the Indonesian Eastern Fleet Network to support successful fleet missions and operations.

Chapter III: Computer Communication Network - provides an introduction to the fundamental concepts of networks that is needed as a framework for understanding the concepts of network infrastructure, design and implementation.

Chapter IV: Designing Local Area Networks Infrastructure - provides the fundamental guide lines for designing LANs infrastructure, recommends a standardized LAN architecture, LAN connection options, and the selection of a network operating system.

Chapter V: Web-Based Wide Area Network Design - discusses WAN connection services, linking the network, and implementing an integrated WAN. Recommends the appropriate choice of WAN links service, WAN Hardware and Software. The last part of this chapter discusses managing the WAN using web-based technology.

Chapter VI: Describes the proposed WAN design using the EXTEND-4 simulation software program.

Chapter VII: Conclusion.

## F. EXPECTED BENEFITS OF THIS THESIS

This thesis will become the foundation of web-based technology studies in the Indonesian Eastern Fleet to achieve the needed network management improvement. The integrated wide area network is expected to support the Indonesian Eastern fleet in making critical changes in how they do business, and ultimately result in increased readiness, contributory support, and overall effectiveness. Central to these benefits is the establishment of a standardized network infrastructure and making significant changes to business practices that will fully utilize the available technology.

The overall benefit of implementing a web-based wide area network is improved fleet readiness through a better computer communications network, real-time fleet support, training and information exchange, and a more responsive method of managing requests for support from the Fleet. Implementing a web-based network management enables the improvement of the organization through more efficiently sharing and gathering information. It enables users to combine knowledge and experience of the entire organization and to fully exploit information technology systems for strategic purposes.

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# II. PROBLEM DEFINITION

## A. MISSION

The mission and operation of the fleet can be conducted successfully if there is sufficient support from its existing system. The mission of the Indonesian Eastern fleet is to conduct daily sea operations to enforce the law at sea and to maintain sovereignty in the entire eastern sea territory of Indonesia. Coordination and communications systems are crucial to successful operation and to accomplishing the mission. An integrated decision making system and real time access to all relevant data and information are essential to successful fleet operations. This is the point at which information technology infrastructure becomes important; especially the establishment of the Indonesian Eastern fleet wide area network.

A reliable computer communication system is expected to provide an effective method to accomplish the fleet's missions and provide contributory support. It is an essential tool for carrying out the Indonesian Eastern fleet's mission given the complexities of coordinating the fleet. Naval base and naval unit location, unit placement and composition, and communication systems operations are among the factors affecting the fleet operations strategy. All of these components could be better administered with an integrated wide area network computer communications system.

## B. THE REQUIREMENTS OF THE INDONESIAN EASTERN FLEET INFORMATION SYSTEMS

### 1. The Need for Connectivity

The Indonesian Eastern Fleet requires connectivity as a central concept in computer and communications networks. A military organization such as the Indonesian

Eastern Fleet relies on applications like database management systems, electronic mail, and integrated decision-making systems for supporting fleet operation. Any collection of independent computers in all office units in the Indonesian Eastern Fleet need to be able to communicate with one another over a shared network medium. Connectivity provides a means to individually address any device on a network. One aspect of information technology enhancements for the Indonesian Eastern fleet has been the implementation of a plan to establish a wide area network (WAN).

### 2. Effective Local Area Networks (LANs) and an Integrated Wide Area Network (WAN)

The Indonesian Eastern fleet needs a global, high-speed, interactive computer-network with adequate capacity for voice, video, and a wide range of data communication among its operational units including naval bases, warships, and aircraft. The suitable network would facilitate "just in time" transmission of Indonesian navy policies and positions as well as statements by navy leaders.

The Indonesian Eastern Fleet needs a network system that provides quick access to information via real time databases no matter what the time differences between fleet headquarters in Surabaya and all units in the entire eastern fleet operational area. This wide area network would enhance collaboration on regional strategies and policies across geographic boundaries at no additional cost.

### 3. Improved Access to the Internet and Other Information Services

The Indonesian Eastern fleet needs the link of computer communication systems that provides improved access to the Internet and other information services. The network would also result in substantial savings. This rapid, interactive network would

provide fast and cost-effective services that will improve the Indonesian Eastern Fleet's information system technology.

### 4. Minimize Costs

The improvement of Information Technology systems needs a lot of budget available. However, we need to minimize cost that will be spent on designing and building the network, so it will meet the Indonesian Eastern Fleet's budget allocation.

## C. THE INDONESIAN EASTERN FLEET NETWORK

Local area networks (LANs) are currently being established in Surabaya main Naval base. The Indonesian Eastern Fleet headquarters is located here from where the communications systems for the entire eastern fleet area are managed and controlled. There are three LANs that are being established in Surabaya: the Indonesian Navy Eastern Fleet headquarters LAN, Surabaya main Naval base LAN, and Juanda Naval air base LAN. In the near future, local area networks are planned to be established in Ujung Pandang, Bitung and Jayapura. These local area networks will be connected together as an integrated wide area network. The improved Indonesian Eastern Fleet network system is required to effectively communicate within the Indonesian Eastern Fleet organization as well as with their Navy counterparts.

The use of computer systems in gathering and distributing information is essential to the daily operations of fleet units. Most operational and administrative offices in the Indonesian Eastern Fleet are equipped with computer systems. The fleet's four main naval bases and their remote naval bases are widely dispersed geographically. This wide dispersion has made it difficult and costly to integrate all the bases into a wide area network, whether by cable, satellite, or dial-up phone.

Computer communication networks are supported from the four main Naval bases in an integrated WAN and are designed to connect remote naval bases dispersed through the entire eastern region. The problem regarding long distance among those widely dispersed naval bases could be solved using web-based technology. An integrated WAN would be able to efficiently connect computer and communication systems in those diversified main naval bases and their remote naval bases. Fleet contributory support to the Navy gaining commands, administrative requirements, and training and exercises will be fulfilled more efficiently using an improved Indonesian Eastern Fleet Network.

## D. DESIGN GOALS

The goal of this thesis is to recommend standardized local area network and wide area network configuration that will meet the requirements of the Indonesian Eastern Fleet. The primary goals for the new systems are efficiency, speed and high reliability. By interconnecting all of the Indonesian Eastern fleet's computer communication systems in an integrated web-based wide area network, we gain several advantages, such as improved efficiency, increased productivity, saving effort, seizing opportunities and reduced costs.

The integrated web-based wide area network should be able to take advantage of information systems support by linking all the existing computer and communication systems resources in all of the Indonesian Eastern Fleet units. It should also be managed by a proper network management system to ensure the network operation always run properly. With improvements in information systems technology, the Indonesian Eastern fleet can have effective and rapid access to various strategic planning systems. This

includes force structure and the development of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) capabilities.

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# III. COMPUTER COMMUNICATION NETWORK

This chapter introduces the fundamental concepts of networks as a framework for understanding the concepts of network infrastructure, design and implementation. Networking deals with the technology and architecture of the communications networks used to interconnect communicating devices. A network consists of computers and other devices, the physical connection between them, and the additional hardware and software required to enable them to communicate with each other. Why are computer networks important? What motivates people to connect computers together? Sharing is the chief motivation for networking computers. A network enables us to share resources such as files, software application, and devices (hard disks, printers, modems, and so forth). Having a computer communication network enables our organization to work, cooperate and communicate with great efficiency.

## A. DATA COMMUNICATION NETWORKING

The fundamental purpose of a communications system is the exchange of data between two or more parties. Electronic communications provide the means for the transmission, reception and processing of information between two or more locations using electronic circuits [Tomasi, 1998].

Many problems appear when multiple communicating devices are directly connected point-to-point. It is very expensive to string a dedicated link between two devices that are separated by thousands of kilometers. The other problem occurs when each node requires a link to many of the others at various times. The solution to this problem is to attach it to a communication network. A network is a group of computers

and various devices (such as printers and routers) that are joined together in a common network medium.

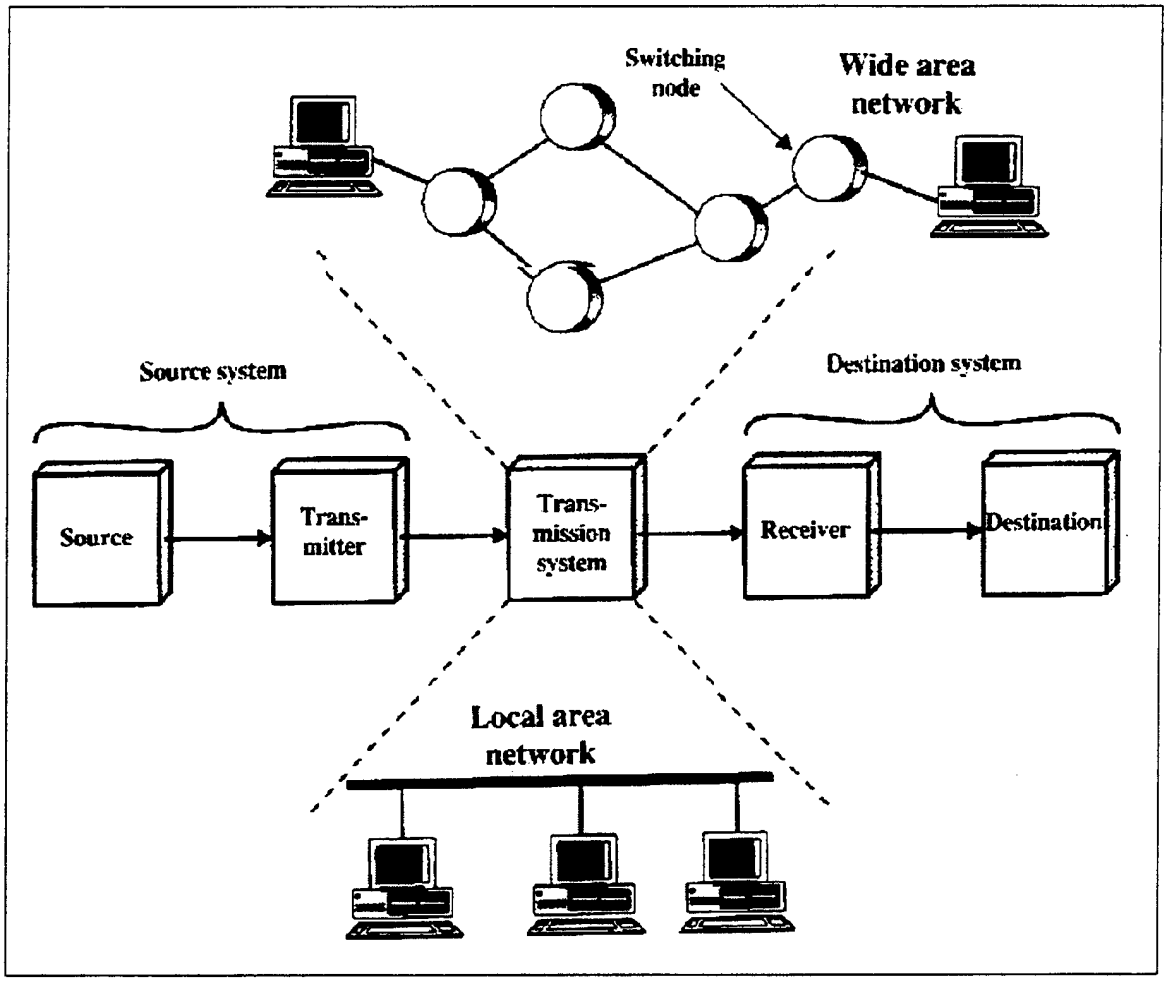


Figure 1. Simplified Network Model. [From Stallings, 2000, p.10]

Figure 1 illustrates the two major types of computer communication networks distinguished by their size and location, as a local area network (LAN) and a wide area network (WAN). A local area network (LAN) is the basic building block of any computer network. It is a group of interconnected computers located relatively close to each other which permits users to share information and resources. A LAN can range from a simple network with two computers connected by a cable, to a complex network

with hundreds of connected computers and peripherals throughout a major corporation. Within a building or campus-style corporate complex, a LAN would be used for:

- ***Interactive Computing:*** The LAN supports flexible database access and resource sharing among groups of users
- ***Switching among multiple host computers:*** LANs allow virtual circuits from a user to several computers
- ***Broadcast and flexible addressing:*** A LAN allows messages to be received by some or all users in a system

A wide area network (WAN) has no geographical limit. It can connect computers and other devices on opposite sides of the world. A WAN is made up of two or more LANs connected together. LANs support transmission over relatively short distances, while WAN's packet-switching technology support transmission in a large geographical area.

## B. PEER-TO-PEER AND SERVER BASED NETWORK

Both peer-to-peer and server based exist as the configuration of the end systems of the networks. A peer-to-peer network is where each computer on the network is both a client and a server. All computers are equal, and each workstation functions independently in its administration and operation. A client on the network can access any other client's files, no single person is assigned to administer the resources of the entire network. Users are responsible for making shared resources available, maintaining applications and data on their own computers, installing and upgrading applications, and deciding who gets access to their shared resources.

In a server-based network, one or more computers act as servers and provide the resources to the network. The other computers are the clients and use the resources provided by the servers. A server-based network has a network administrator responsible

for managing the network. Shared data files, programs, and resources are centralized to one or more specially configured computers called a server. All network administration, security, and maintenance are managed by the network administrator. Client/server computing uses a powerful server to store data. The client workstation can process some or all of the requested data. The data is secure and easy to maintain because the file services are in one location on the server.

Centralization provides reliability and consistency in network administration. One advantage of server-based network is better performance, several computers can process applications in parallel. We can distribute application programs to the client computers and the database is processed by the server computer.

## C. NETWORK TOPOLOGY

Network topology has an important role in designing a network. A topology is the physical layout of computers on a network. Topologies can be physical (actual wiring) or logical (the way they work). A network's topology is a map of the arrangement of its nodes and connections between them. There are several network topologies that we can choose among for the Indonesian Eastern Fleet network:

### 1. Bus Topology

In the bus network topology, we connect each node to the network along a single piece of network cable, called a bus. The bus provides the path for the data, and devices tap into the bus along its length to communicate with other devices. Data travels from a node out onto the bus until it reaches the ends of the cable. At each end of the bus, a device called a terminator is installed to prevent data signals from reflecting back onto the bus and causing errors. When the transmitted data hits the terminator, it does not go

any farther. The disadvantage of this topology is that if the single cable acting as the bus is severed at any point, the entire network goes down. Bus topology is used in the Ethernet LANs configuration.

### 2. Star Topology

In the star network topology, the computers network nodes are connected to a central device called a hub. Small LANs with less than eight nodes usually need only one hub. Larger networks may require many hubs, and hubs can be connected to each other to tie all the nodes together into a single network. Hubs are used to centralize the data traffic and localize failures. If one cable breaks, it will not shut down the entire network.

### 3. Ring Topology

The ring network topology is made up of an unbroken circle of network nodes. Each node is directly connected to its two immediate neighbors. The data is passed from one computer to another around the circle. If the ring is broken at any point along the way, the entire network stops functioning. This problem is solved in FDDI LANs configuration by using double-linked rings. Token Ring LANs and FDDI LANs configuration use the ring network topology.

### 4. Star Bus Topology

The star bus is a combination of the bus and star topologies by linking several star topology networks with linear bus trunks. It will not affect the rest of the network if one computer goes down. However if a hub goes down, all computers on that hub are unable to communicate, and if this hub is linked to other hubs those connections also will be broken.

### 5. Star Ring Topology

The star ring topology is a combination of the star and the ring topology. Both the star ring and the star bus are centered in a hub that contains the actual ring or bus. Linear-bus trunks connect the hub in a star bus, while the hubs in a star ring are connected in a star pattern by the main hub.

## D. PASSING DATA ACROSS A NETWORK

Windows 95/98/ME, Windows NT 4.0, Windows 2000, and other network operating systems have implemented a layered, modular networking architecture. That architecture is based on an industry standard called the Open System Interconnect (OSI) Reference Model.

The OSI model defines an approach to networking in which each layer is responsible for a very specific portion of the networking function. It provides a framework for understanding the software and hardware components of networks and how they interact with each other.

Figure 2 depicts the OSI reference model that passes the data from one layer to the next in its journey from source to destination. It describes the flow of data in a network from the lowest layer, representing the physical network connection, to the highest layer, representing the services used directly by applications.

The data begins its journey at the highest layer on Node A and travels down until it reaches the physical network. The information travels over the physical network and arrives at the lowest layer on Node B. It then travels up on Node B until it reaches the application layer. On its way up through the Node B layers, the control information that

was added on Node A is stripped off, layer by layer, until the application receives the original data that was sent by the application on Node A.

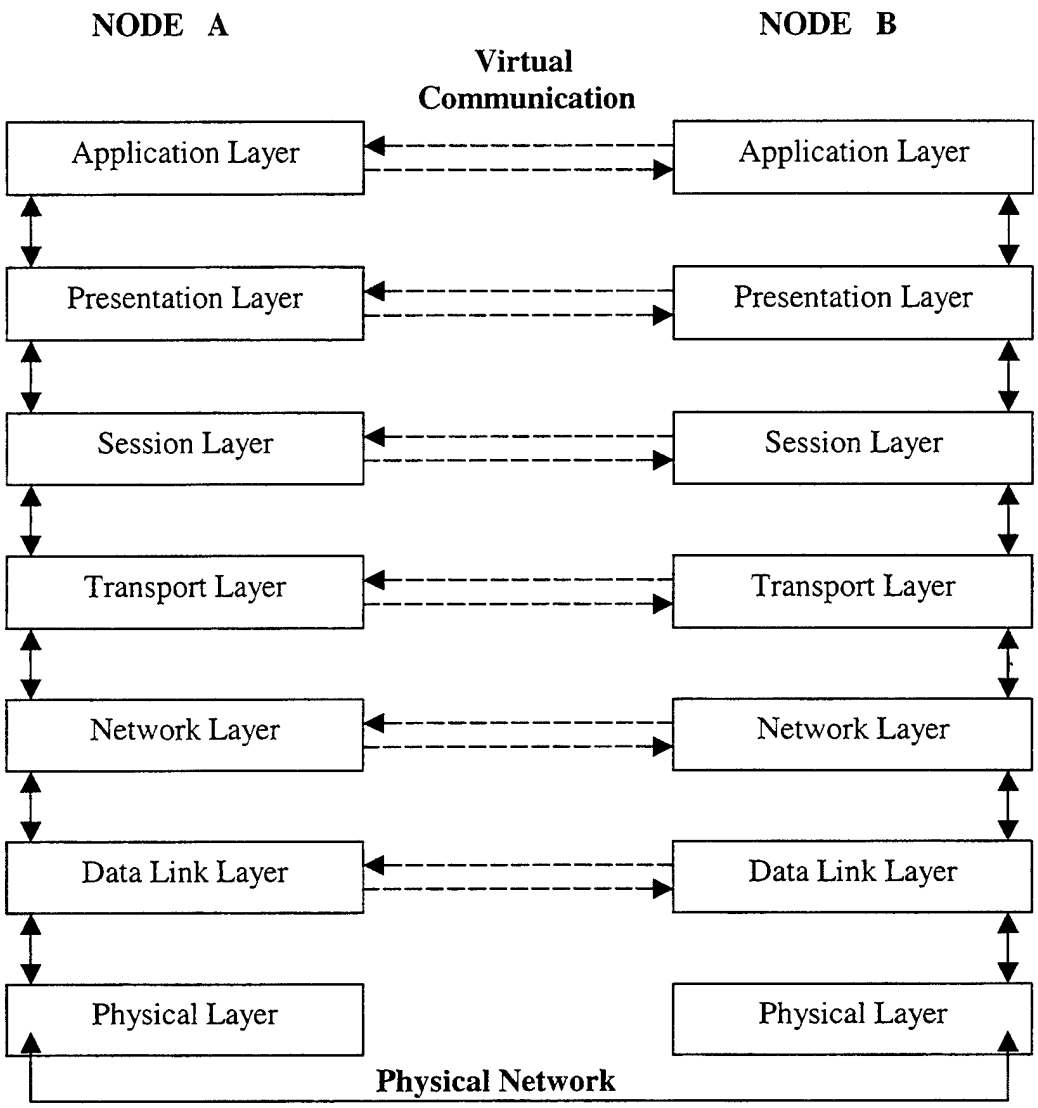


Figure 2. The OSI Reference Model.

The explanation below shows the roles and responsibilities of each layer in the OSI reference model:

### 1. Layer 1 - Physical Layer

The physical layer is responsible for transmitting raw binary data on the network cable. This layer is the closest to the network hardware and includes both the physical

specifications of how network nodes are connected, and the electrical details of how raw data bits are transmitted and received over the connection medium. It defines how data bits are represented when they are transmitted on the cable. A repeater operates exclusively at the physical layer of the OSI model. The data packets handled by the repeater are exactly the same coming in as they are going out. All other network devices that transmit or receive information on the network also operate at this layer.

### 2. Layer 2 - Data Link Layer

The Data Link layer packages the raw stream of data into data frames for transmission. A frame is a manageable, logical chunk of information that includes the data to be transmitted as well as information about its source and destination. It also includes information that helps the recipient of the transmission detect whether the data arrived intact. The data link is responsible for preparing data frames for transmission, receiving data frames, managing the network access method, and assuring error-free node-to-node communication.

The Data Link layer is divided into two sublayers: *Logical Link Control (LLC)* and *Media Access Control (MAC).* The LLC manages connections between network nodes and controls the flow of data frames. The MAC sublayer manages the network's access method. In an Ethernet environment, the MAC sublayer implements the CSMA/CD access method. The MAC sublayer isolates the access method management functions from the other functions of the data link layer. It also ensures an error-free communication path between nodes by retransmitting data frames and throwing away duplicate frames when necessary. ATM, Frame relay and X25 are designed to

interconnect point-to-point links. They do not have any MAC protocols and this is one of the reasons that terrestrial WAN protocols are suited to radio WANs.

### 3. Layer 3 - Network Layer

The network layer is concerned with packet switching. It addresses data transmissions and translates logical into physical addresses. The network layer determines the route of each packet from the sender to the receiver. The Internet Protocol (IP) operates at the network layer and it is stateless and connectionless.

Routers also operate at the network layer and they can route packets across several networks. A router can reach into a data packet, reading and interpreting its embedded addressing information. It uses this information to update its routing tables for the next packet that comes along.

### 4. Layer 4 - Transport Layer

Transport layer provides transparent transfer of data between end points. Transport Control Protocol (TCP) and User Datagram Protocol (UDP) operate at transport layer. All state of connections resides in the transport protocol. TCP is a transport protocol that does error checking and ensures all packets are delivered efficiently, without error, and processed in the same sequence in which they were sent. UDP is a transport protocol that provides application programs with connectionless communication service but does not error checking.

### 5. Layer 5 - Session Layer

The session layer is concerned with network management by handling password recognition, logon and logoff procedures, and network monitoring and reporting. The session layer enables application processes on two different nodes to establish,

communicate over, and terminate an end-to-end connection called a session. The session layer focuses on managing the entire dialog between the two processes by controlling who transmits when and for how long. Just as the transport layer ensures in-sequence delivery of packets, the session layer ensures in-sequence delivery of messages.

### 6. Layer 6 - Presentation Layer

The presentation layer controls the formats used to exchange data between network nodes. It translates application data into a commonly recognized form at the sending node, and translates the data from the common form to an application-specific form at the receiving node. It controls how the network presents itself to applications which is include character set conversion, data compression/expansion, encryption and decryption, file format translation, and graphics command expansion.

### 7. Layer 7 - Application Layer

Network programs found at the Application layer include electronic mail, database managers, file-server software, and printer-server software. The application layer handles messages, remote logons, and network management statistics.

## E. NETWORK SHARED MEDIUM

Network shared medium is used to transmit data over the network and this is an essential element of a computer communication network. Nowadays, transmission media can take the form of cabling system and wireless system. The main types of media available for use in implementing a LAN is as follows:

### 1. Cabling System

The vast majority of networks today are connected by some sort of wiring that act as a network transmission medium that carries signals between computers. Many cable types are available to meet the varying needs and sizes of networks. The majority of

networks are connected by one of two major classes of cable: twisted-pair (unshielded and shielded) cable or fiber-optic cable.

### *a. Twisted-Pair Cable*

Twisted-pair cable consists of two insulated strands of copper wire twisted around each other: unshielded twisted-pair (UTP) and shielded twisted-pair (STP) cable.

(1) Unshielded Twisted-Pair (UTP) Cable. UTP cable consists of two insulated copper wires, and it has four individually twisted pairs of wires in a common sheath. There are five standard categories of UTP to ensure consistency of products for customers:

- **Category 1 UTP** can carry voice but not data transmissions
- **Category 2 UTP** is rated for signals of 4 MHz with a data rate of 4 Mbps
- **Category 3 UTP** is rated for signals of 16 MHz with a data rate of 16 Mbps. It supports 10 Mbps Ethernet, 16 Mbps Token ring, and 100VGAnyLAN with a maximum length of 100 m per segment.
- **Category 4 UTP** is rated for signals of 20 MHz with a data rate of 20 Mbps. It consists of four twisted pairs of copper wire.
- **Category 5 UTP** is rated for signals 100 MHz or less and supports 100 Mbps Fast Ethernet. Individual cable runs should not exceed 100 meters, including the patch panel and patch cable.
- **Category 5 Enhanced UTP** is rated for 200 MHz with a data rate of 200 Mbps. Category 5 Enhance UTP is now being used in most new constructed LANs.

(2) Shielded Twisted-Pair (STP) Cable. STP cable uses a woven copper-braid jacket that is more protective and of a higher quality than the jacket used by UTP. STP also uses a foil wrap around each of the wire pairs. This gives STP excellent shielding to protect the transmitted data from outside interference, which in turn allows it to support higher transmission rates over longer distances than UTP.

#### *b. Fiber-Optic Cable*

Fiber-optic cable is the best choice when the network needs to transmit data at very high speeds over long distances in a very secure media. At the present time, fiber is commonly used in campus networks at all levels above the desktop computer communications.

The Fiber-optic cable principles of operation are different than a copper cable. Copper cable transfers information in the form of transverse electromagnetic waves while optical fibers carry digital data signals in the form of modulated pulses of light. This is a relatively safe way to send data because no electrical impulses are carried over the fiber-optic cable. This means that fiber-optic cable cannot be tapped as easily, and its data cannot be stolen as easily. Fiber-optic cable is good for very high-speed, high-capacity data transmission because of the purity of the signal and lack of signal attenuation. Currently industries are using OC-192 (10 Gbps) for their network transmission. However, because fiber is point to point it cannot be used for bus topologies.

### 2. Wireless System

Wireless technology uses either optical or radio techniques to transmit data. Computers operating on a wireless network function similar to cable networks, except that the network interface card (NIC) is connected to a wireless transceiver instead of a cable. A wireless bridge can connect buildings that are situated as much as 40 kilometers (about 25 miles) apart. Cellular communication, satellite stations, and packet-radio communications are adding mobility to networks. Wireless LANs use four techniques for transmitting data:

#### *a. Infrared Transmission*

Infrared networks transmit and receive data using a high-intensity infrared light beam. Infrared transmission has a line-of-sight limitation. If someone walks between the two computers, the wireless connection is broken until there is a clear path again.

#### *b. Laser Transmission*

Laser networking technology is similar in concept to infrared. It requires an unbroken direct line of sight between sender and receiver. People or objects that get in the way will block transmission. Laser technology is more expensive than infrared.

#### *c. Narrowband Radio Transmission*

Narrowband radio uses an approach similar to a radio station. The sender and receiver use a specific radio frequency.

#### *d. Spread-spectrum Radio Transmission*

Spread-spectrum radio transmission broadcasts its transmissions over a range of radio frequency instead of just one. It divides the available frequency into channels. All the wireless nodes in the network synchronize to a specific channel.

### 3. Cabling System versus Wireless System

A wireless system is convenient, does not require wiring, and is certainly more flexible than a traditional cable network. On the other hand, a wireless system is relatively high cost and its transmission systems relatively slower than CAT-5 UTP cable or fiber optic cable. The fastest data transmission speed over a wireless LAN at the present time is 23.5 Mbps [Computer Magazine, Oct. 2000], while a cabling system LAN using CAT-5 UTP transmits at 100 Mbps; and fiber optic cable in a Gigabit Ethernet is even faster.

So, if our network investment is measured in terms of the cost and bandwidth, wireless networking offers the lowest value. Due to its high cost and transmission speed, wireless is a good alternative only if we have a real need for it. A cabling system is more appropriate for use in the Indonesian Eastern Fleet network as its LAN shared medium.

# IV. DESIGNING THE INDONESIAN EASTERN FLEET LANS INFRASTRUCTURE

This chapter forms the foundational guidelines for designing and implementing the Indonesian Eastern Fleet LAN's infrastructure. In designing LAN infrastructure, it is necessary to know the concepts associated with designing the logical layout of our network, as well as the issues involved with creating the physical network infrastructure. Understanding the end user requirements is important because end users will interact with the application running on their network. We must learn what the end user needs, determine which software will best provide that functionality, and finally build software distributions of public domain programs that meet all user requirements for network-based operations. The Indonesian Eastern Fleet network's most important end users are computer operators, naval units personnel, and fleet support facilities personnel. Defining an appropriate technology design and selecting a useful network operating system will determine the performance and the capability of the network.

## A. NETWORK ANALYSIS

Network analysis is needed in designing the Indonesian Eastern Fleet network in order to fully understand our design environment. This involves identifying, gathering, understanding system requirements, and developing performance thresholds to determine specified services for the network. The computer network designed must meet the needs of the organization. The Indonesian Eastern Fleet's network goals are to:

- Network the existing computers so that they can more efficiently share information and network resources
- Provide a full access Internet connection
- Provide video conferencing facility

- Provide hypermedia technology including: text, graphics, image, audio, and archive
- Improved fleet readiness through an improvement in information systems technology
- Minimize cost

The network analysis process begins by defining the requirements of our network. Next these requirements will be matched to the existing telecommunication features available and then determine what steps are needed to develop the network. At a minimum, we should consider requirements of the network that consists of:

- The number of users
- The size of the facility
- The environment (office, manufacturing, out-of-doors)
- Performance Characteristic, which include:
    - Storage (disk drive) performance
    - Processor (CPU) performance
    - Memory performance (access time)
    - Bus performance (bus capacity and arbitration mechanisms)
    - Operating system performance

Information about any of these components can be helpful in estimating the overall performance of computer network as seen in figure 3 below.

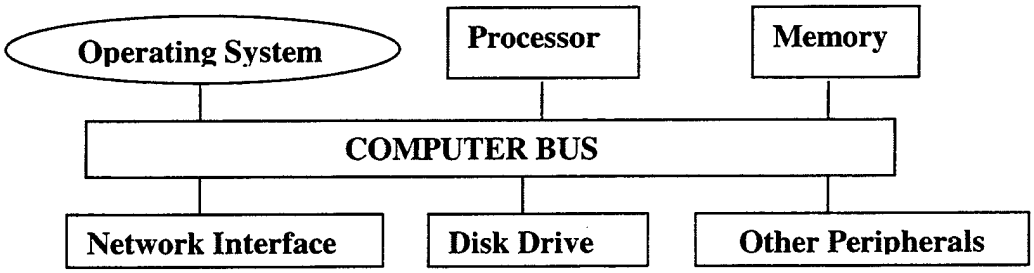


Figure 3. Computer Network Performance Components.

- Location information. It helps to determine the relationships between components of the system.

## B. THE STANDARD LAN ARCHITECTURE: ETHERNET TECHNOLOGY

A network's architecture specifies the desired structure of the network. Its purpose is to provide an organization with a framework for more informed decision-making and a guide for ongoing planning. It includes some specification of standards, distribution of system functions and how the components relate to one another.

A standard architecture is critical to the establishment of the Indonesian Eastern Fleet Network. The architecture's main purpose is to provide guidance and structure for implementing the network. It helps to define the information technology strategy. A uniform strategy is needed to insure that all LANs are implemented similarly. This will help to insure that the LANs will function effectively when incorporated into the Indonesian Eastern Fleet Network. The LAN architecture is one part of the overall WAN network architecture. Without a standard LAN architecture, it will be difficult to manage and connect the collection of disparate systems. A uniform approach that conforms to published guidance on standardization will result in a more viable network.

The network architecture can be selected based on its topology, access method, signaling method, or support of a particular type of transmission medium. Although there is no one best network for users, Ethernet represents a diverse mixture of technological characteristics. In the 1980s the IEEE published Project 802. This project generated standards for design and compatibility for hardware components that operated within the OSI physical and data-link layers. The standard that pertains to Ethernet is the IEEE 802.3 specification. Ethernet network architecture strikes a good balance between speed, cost and ease of installation.

## 1. THE IEEE 802.3 ETHERNET NETWORK

### *a. The Features*

Talking about the Ethernet features begins with the topology. The traditional topology such as a linear bus or another topology such as a Star Bus can be used. The IEEE 802.3 Ethernet Network relies on Carrier Sense Multiple Access/Collision Detection (CSMA/CD) as its access method to regulate traffic on the main cable segment. If two or more computers happen to send data at exactly the same time, there will be a data collision. When that happens, the two computers involved stop transmitting for a random period of time and then attempt to retransmit. Each computer determines its own waiting period; this reduces the chance that the computers will once again transmit simultaneously. Commonly, many computers on the network attempt to transmit data (multiple access); each one first listens to detect any possible collisions. If a computer detects a possible collision, it waits for a random period of time before retransmitting (collision detection). CSMA/CD is known as a contention method because computers on the network compete for an opportunity to send data. Nowadays users should not aware when they are using a contention access method because current implementations are very fast. CAT-5 UTP cable transmits at 100 Mbps and this problem was solved. Table 1 below describes the features of Ethernet technology that we can use to determine our plan in building the local area network infrastructure.

| Feature | Description |
|---|---|
| Traditional topology | Linear bus |
| Other topologies | Star bus |
| Type of architecture | Base band |
| Access method | CSMA/CD |
| Specification | IEEE 802.3 |
| Transfer speed | 10 Mbps or 100 Mbps |
| Cable type | Cat-5 UTP |

Table 1. The Features of Ethernet Technology.

### *b. Constructing the Ethernet Network*

In constructing an IEEE 802.3 Ethernet network either the 10-Mbps IEEE Standards or the 100-Mbps IEEE Standards can be used. A 10 Base-T and a 100 Base-T network can be constructed with network interface cards (NICs), UTP cable, and one or more hubs. Each is installed in the expansion slot of a computer and wired on a point-to-point basis to a hub port. When all the ports on a hub are used, one hub can be connected to another to expand the network, resulting in a physical star, logical bus network structure.

In the definition process of standardization development, both the Ethernet media access control (MAC) and the physical layer require adjustments to permit 100 Mbps operational support. The 10 BASE-T and 100 BASE-T standard supports an operating rate of 10 Mbps at a distance of up to 100 meters (328 feet) over UTP cable without the use of a repeater. The wiring hub in an Ethernet network functions as a multiport repeater: it receives, retimes, and regenerates signals received from any attached station. The hub also functions as a filter; it discards severely distorted frames.

All hubs that conform to IEEE 10/100 BASE-T specifications perform a core set of tasks in addition to receiving and regenerating signals. 10/100 BASE-T hubs test each port connection, detect and handle excessive collisions, and ignore data that exceeds the maximum 802.3 frame size.

Hubs can monitor, record, and count consecutive collisions that occur on each individual station link by using a management agent. Since an excessive number of consecutive collisions will prevent data transfer on all of the attached links, hubs are required to cut off or partition any link on which too many collisions have occurred. This

partitioning enables the remainder of the network to operate in situations where a faulty NIC transmits continuously.

### c. *The Ethernet Frame Operations*

Ethernet breaks data down into frames. A frame is a package of information transmitted as a single unit. It is used to deliver data between computers. An Ethernet frame can be between 64 and 1518 bytes long, but the Ethernet frame header uses at least 18 bytes. Every frame contains control information and follows the same basic organization.

| PREAMBLE | DESTINATION ADDRESS | SOURCE ADDRESS | TYPE | DATA | FRAME CHECK SEQUENCE |
|---|---|---|---|---|---|
| 8 bytes | 6 bytes | 6 bytes | 2 bytes | 46-1500 bytes | 4 bytes |

Header Payload

I----------I----------I

Figure 4. The Ethernet Frame Format.

The Ethernet packets begin with a Preamble that consists of eight bytes and is used for synchronization. The first two fields in the frame carry 48-bit addresses, called the destination and source addresses. The IEEE controls the assignment of these addresses by administering a portion of the address field. The IEEE does this by providing 24-bit identifiers called "Organizationally Unique Identifiers" (OUIs), since a unique 24-bit identifier is assigned to each manufacturer that wishes to build Ethernet interfaces. This 48-bit address is also known as the physical address, hardware address, or MAC address. The destination address can be a single workstation's address, a group of

workstations, or even several groups of workstations. The source address tells the workstation receiving the message where it came from.

As each Ethernet frame is sent onto the shared signal channel, all Ethernet interfaces look at the first 48-bit field of the frame, which contains the destination address. The interfaces compare the destination address of the frame with their own address. The Ethernet interface with the same address as the destination address in the frame will read in the entire frame and deliver it to the networking software running on that computer. All other network interfaces will stop reading the frame when they discover that the destination address does not match their own address.

The Type field designates which type of format the data is using. Without this information, it is impossible to decipher the packet when it arrives. The Data field is strictly limited; it can hold only a minimum of 46 bytes and a maximum of 1,500 bytes. Frame-Check Sequence provides a mechanism of error detection. It contains a check system of the rest of the frames which allow receiver to detect error.

Computers attached to an Ethernet can send application data to one another using high-level protocol software, such as the TCP/IP protocol suite used on the worldwide Internet. The high-level protocol packets are carried between computers in the data field of Ethernet frames. The system of high-level protocols carrying application data and the Ethernet system are independent entities that cooperate to deliver data between computers.

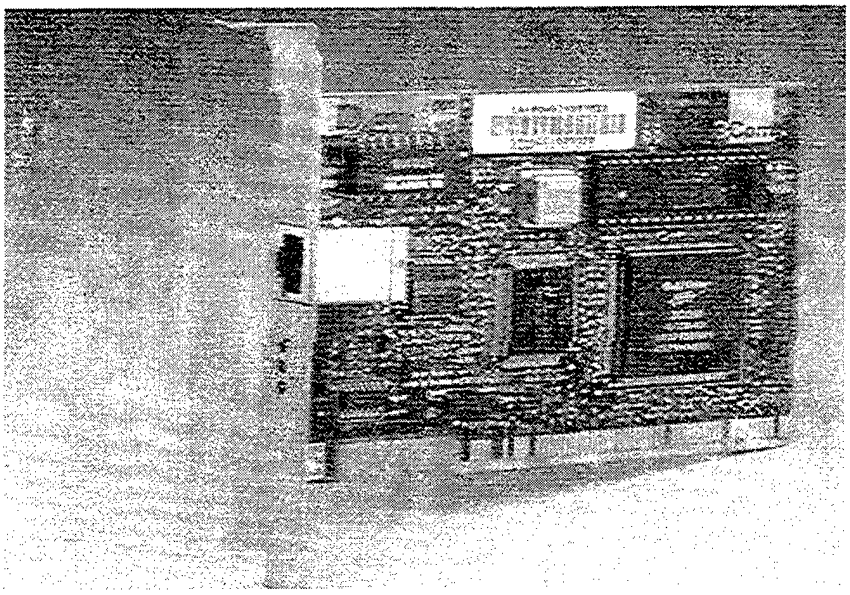

Figure 5. Fast Etherlink 100 BASE-T XLK NIC.

### 2. Fast Ethernet (100 Mbps) Network

One version of Ethernet technology that widely used is the 10 Mbps twisted-pair category. Fast Ethernet (100 Mbps) is a more recent Ethernet standard which operates over twisted-pair and fiber optic media and has become the accepted standard. Fast Ethernet transmits data much faster than Ethernet, and it also has some other advantages when used in the LAN architecture. These include moderate throughput, numerous vendors, strong commercial support, reliable multi-vendor interoperability and availability in a fiber version.

Fast Ethernet LAN specifications include 100 BASE-TX and 100 BASE-FX. Each specification maintains the use of the MAC protocol used by earlier Ethernet/IEEE 802.3 standards, CSMA/CD. 100BASE-T specifies 100-Mbps operations using the CSMA/CD protocol over two pairs of category 5 UTP cable. 100BASE-FX changes the LAN transport media to fiber optic cable.

| IEEE Media Specifications | Cable Support | Connector Support | Coding Scheme |
|---|---|---|---|
| 100BASE-TX | Category 5 UTP (2-pair wire) | RJ-45 | 4B/5B |
| 100BASE-FX | 62.5/125-micron fiber-optic cable | RJ-45 | 4B/5B |

Table 2. Fast Ethernet Functionality.

Fast Ethernet 100BASE-TX is inexpensive compared to 100Base-FX because category 5 UTP cable is cheaper than fiber-optic cable. Even though data transmitted over fiber-optic cable is very fast and secure, data transmitted using category 5 UTP cable is already fast enough and good enough to meet the Indonesian Eastern Fleet Network requirements. The Ethernet specifications (IEEE 802.3) of the 10Base2, 10BaseT, and 100BaseTX are explored in Table 3.

| | **10Base2** | **10BaseT** | **100BaseTX** |
|---|---|---|---|
| **Topology** | Bus | Star bus | Star bus |
| **Cable type** | RG-58 (thinnet coaxial cable) | Category 3, 4, or 5 unshielded twisted-pair cable | 2-pair Category 5 UTP or STP |
| **Connection to NIC** | BNC T connector | RJ-45 | RJ-45 |
| **Distance** | 0.5 meters between computers (Max 185 m) | 100 meters (328 feet) between the computer and the hub | 100 meters (328 feet) |
| **Maximum cable segment length** | 185 meters (607 feet) | 500 meters (1640 feet) | 100 meters (328 feet) |
| **Maximum computers per segment** | 30 (There can be a maximum of 1024 computers per network.) | 1 (Each station has its own cable to the hub. There can be a maximum of 12 computers per hub and a maximum of 1024 transceivers per LAN without some type of connectivity.) | N/A |

Table 3. Ethernet Specifications (IEEE 802.3).

### 3. GIGABIT ETHERNET (1000 Mbps) NETWORK

Gigabit Ethernet provides a data transmission capability of 1000 Mbps and supports the CSMA/CD access protocol. Similar to 10 Base-T and Fast Ethernet, Gigabit Ethernet can be used as a shared network through the attachment of network devices to a 1-Gbps repeater hub. It provides 1-Gbps ports to accommodate high-speed access to servers. Gigabit Ethernet operations require workstations, bridges, and routers to use a network interface card to connect to a 1-Gbps network. The maximum distance obtainable for Gigabit Ethernet when transmission occurs using a 1330-nanometer (nm) frequency on single-mode fiber is 3000 meters [Ref. : Held, 1998]. Data transmission on 1000BASE-T Gigabit Ethernet using category 5 UTP cable has a maximum distance of 100 meters, as does 100 BASE-T Fast Ethernet.

There are presently only a very few organizations that can be expected to require the use of a 1-Gbps shared media network. However, the use of Gigabit Ethernet can be expected to play an important role in providing a high-speed network in the future.

### 4. Making the Technology Choice for the Design

Based upon the need to have good results in network performance, all LANs in the Indonesian Eastern Fleet Network should be implemented as a Fast Ethernet (100 Base-T). This will provide a consistent approach and ensure that the network meets current needs while supporting future growth. Fast Ethernet has sufficient bandwidth to support an increase in network traffic and advances in network technology.

High-Speed Gigabit Ethernet 1000 Mbps is still not widely accepted and is too expensive to be implemented. Fast Ethernet is at the leading edge of Ethernet technology and offers significant advantages over 10 Mbps Ethernet. Fast Ethernet, operating at 100

Mbps, which is ten times faster than 10Base-T Ethernet, is a reliable LAN technology designed to meet high demands for network bandwidth. Network managers also benefit from Fast Ethernet by leveraging the familiarity of the underlying Ethernet technology and the protection offered for investments in applications, cabling, and management expertise.

Fast Ethernet delivers high performance and familiar technology. Another benefit arises from the fact that Fast Ethernet products are becoming increasingly inexpensive. For all of those reasons, Fast Ethernet 100 Base-T LAN is the most appropriate choice for the standard LANs architecture for the Indonesian Eastern Fleet Network. Implementation of Fast Ethernet 100 Base-T will provide a responsive and uniform network environment.

## C. DEFINING THE LAN CONNECTION SYSTEM

The local area network (LAN) is a communication network that interconnects a variety of devices for information exchange. Network nodes can consist of workstations with network interface cards (NICs), hubs, bridges, routers and servers. The idea of a shared medium is a key concept when planning a LAN. The infrastructure is the physical wiring of the LAN, over which all network devices communicate. A properly designed infrastructure can be flexible enough to support current and future networking needs. Cable and hardware infrastructure quickly become the primary limiting factors in most LANs.

Connections in the older networks were mainly 10Base2 (Thinnet), 10Base5 (Thicknet), category 3 (CAT- 3), unshielded twisted pair (UTP) and shielded twisted pair (STP). Modern local area networks use mainly category 5 (CAT-5) UTP cable. The

CAT-5 UTP cable is installed point to point between the workstation and the electronics that make up the network, such as a hub or a switch. The CAT-5 UTP cable terminates to an IDF, and an individual cable should not exceed 100 meters long. The CAT-5 UTP cable has four pairs of wires with a lay length of eight twists per foot. It is rated for signals of 100 MHz or less and supports 100 Mbps Fast Ethernet.

The fiber-optic cable connects all the electronic devices throughout the campus to an MDF. The MDF houses the enterprise category network equipment, such as switches capable of switching packets and routers with multiple ports connecting the enterprise together. Fiber-optic cable uses reflected photon (light) energy instead of an electromagnetic charge to transmit its signal. This makes it resistant to electromagnetic interference.

Since efficiency and cost are the main issues in implementing an effective local area network, it is recommended that any new cable installations use CAT-5 UTP cable for future growth. Installation of CAT-5 UTP where new cabling is required allows maximum flexibility for future expected requirements.

## D. DEFINING NETWORK PROTOCOL

Protocols are the system of rules and procedures that govern communication between two or more devices. Many varieties of protocols exist at all layers of the OSI model. Not all protocols are compatible, but as long as two devices are using the same protocol, they can exchange data. A network protocol is a set of language and set of rules that nodes agree to use to communicate over the network [Gregg, 1999]. When several computers are networked, the rules and technical procedures governing their communication and interaction are called protocols.

NetBEUI is not a routable protocol. It does not contain enough information to send packets from one network to another. NetBEUI is a network protocol that is used in all Microsoft networking products including MS-DOS and all versions of Windows and Windows NT. The NetBEUI protocol works well on old and lower-end computers running MS-DOS.

Internetwork packet exchange/sequenced packet exchange (IPX/SPX) is the network protocol that is usually used on Novell NetWare networks. However, it can also be used as the main protocol in a pure Microsoft network. IPX/SPX is not routable. It operates at the application and session layers of the OSI model.

Transmission control protocol/internet protocol (TCP/IP) is routable. It enables users to connect and communicate across networks that use different hardware architectures and run different operating systems. TCP/IP can be used to communicate on pure Microsoft networks, or on mixed networks with products such as IntranetWare and UNIX. TCP/IP provides reliable data delivery service by setting up end-to-end connections between two systems that need to exchange data. To do this, it establishes a virtual network between the two computers across all routers in the affected network. TCP uses the Internet Protocol (IP) as the transport to deliver information across the network. The main advantage of TCP/IP is its flexibility. Every operating system platform now supports it. TCP/IP is the default protocol for Unix and the preferred protocol for the NetWare and Windows operating system.

## CRITERIA FOR SELECTING NETWORK PROTOCOLS

| Characteristics | NetBEUI | IPX/SPX | TCP/IP |
|---|---|---|---|
| Capability to transmit across routers | No | Yes | Yes |
| Best for corporate intranet | No | No | Yes |
| Best for large networks | No | No | Yes |
| Best for pure Microsoft networks (no routing) | Yes | No | Yes |
| Best for pure Microsoft networks (with routing) | No | No | Yes |
| Best for small LANs | Yes | Yes | Yes |
| Best for WANs | No | No | Yes |
| Ease of client configuration | High | Low | Low |
| Ease of network administration | High | High | Low |
| Interoperability with NetWare | No | Yes | No |
| Interoperability with the Internet | No | No | Yes |
| Interoperability with UNIX | No | No | Yes |
| Performance for application server (client/server) | Low | Low | High |
| Performance for file and printer sharing | Medium | High | Medium |
| Performance on small networks | High | Medium | Medium |

Table 4. Criteria for Selecting Network Protocol [Gregg, 1999]

The Data Link Control (DLC) network protocol enables the network to communicate with certain network printers. The DLC protocol operates in the data link layer and corresponds to the logical link control (LLC) sublayer. When using DLC to communicate with a network printer, the DLC protocol need to be installed on the computer that is acting as the print server for the network printer. Other nodes that send jobs to the print server can use any standard protocol, and do not need to have DLC installed.

User Datagram Protocol (UDP) is a transport layer component that provides data delivery service in the TCP/IP protocol stack. UDP is a connectionless protocol and does not check to see if the packet arrived at its destination. This protocol is used to transmit packets that are time sensitive, or when it is not important to know if they have arrived at their destination. UDP is commonly used in audio and video applications.

## E. CONFIGURING NETWORK COMPONENTS

In the following sections, many of the key networking components are discussed that are likely to be considered in our network design process. Small and simple networks use only cables and network adapters attached to the computers and other devices. However, as the network grows in size and complexity, it needs other networking devices to tie everything together correctly.

### 1. Network Interface Card (NIC)

The network interface card (NIC) is a layer 1 device and is the only device on the network that is actually installed inside the machine. Workstations, servers, print servers, and gateways all have NICs. NICs provide the connection point to a network. Each type of NIC is specially designed for a specific type of network such as Ethernet, Token ring, FDDI, or ARCNET. Newer NICs usually have RJ-45 connectors on them. A standard NIC would be a 10/100 Mbps PCI Ethernet card with an RJ-45 connector. Windows 95/98/ME and Windows NT 4.0 will auto detect most NICs. Before installing the card it is important to ensure that the latest driver is installed on the machine.

### 2. Hubs

A hub is a layer 1 device that repeats a signal to all the hub ports that can connect to network segments or devices. A hub may have as few as 4 ports, 8 ports, 12, or 24 port models. The unit has female RJ-45 connectors on the front that may attach directly

to a computer by means of CAT 5 cable or it can attach to a patch panel with an RJ-45 patch cable. The connectivity with other devices is indicated by a link light at the front panel of the hub. A popular 10/100 autosensing Ethernet hub supports legacy systems and provides growth for greater speed. Hubs are a critical component in most networks, so we need to safeguard them to avoid network down time. In networks containing more than a couple of nodes, it is best to install the hub devices out of the way, preferably in a wiring cabinet or closet.

### 3. Switches

A switch is a layer 2 device that separates a network into segments. It is essential for large Ethernet networks because it eliminates the collisions that are frequent with shared networks. Switches support hierarchical network designs and can connect different architectures. A switch repeats data but, unlike a hub, only to the recipient/port specified by the MAC address.

In a campus area networks, each device (end system) connects to a workgroup switch over a point-to-point CAT-5 UTP cable and shares the media with any other device. This allows for a full-duplex connection between the switch and the device. Workgroup switches are hierarchical in design. They are connected to individual workstations and also to a large enterprise switch. This large enterprise switch connects to Servers and to the WAN via the router. A switch can segment a network into its ports, and forward the packets between those ports at the same time (simultaneously).

### 4. Routers

The router is used to connect to remote offices or the Internet and is installed as a device on the network. An Internet router is usually the gateway address in the TCP/IP

protocol parameters. It is an OSI layer 3 device that routes packets to the proper destination on the basis of the destination network address in the packet. A router will have one or more serial ports with a Channel Service Unit/Data Service Unit (CSU/DSU) connected to it and one or more LAN ports connected to a switch or hub. A router is configured with the local subnet address information and the address information of the router to which it is connected on the WAN port.

## F. SELECTING A NETWORK OPERATING SYSTEM

There are several network operating system servers available, such as Windows NT 4.0 Server, Windows 2000 Server, Novell NetWare, and Windows 98/ME. Due to geographic separation of the organizational units and the high cost of training administrators, the capability to centrally manage the network is an important aspect of limiting the total cost of ownership. The advantages of using a Windows 2000 Server include increased flexibility, scalability, reliability, management capabilities and security. Migration to Windows 2000 provides a common operating system environment and meets the Indonesian Eastern Fleet recommendation on standardization.

Below are the features of network operating systems that are commonly used at the present time:

### 1. Windows NT 4.0 Server

Windows NT 4.0 Server is a full scale network operating system. Its robust security and management features make it a good candidate for medium and large size network environments, but it also requires the knowledge and the management of a network administrator.

Windows NT 4.0 Server is a genuine network operating system. Its services are especially optimized to give the best service for its clients and the Windows NT 4.0 Workstation can be used as a client side operating system. Windows NT 4.0 Server was designed from scratch to perform the roles of a real network operating system with features like preemptive multitasking, multiprocessing, multiplatform support, secure file systems and fault tolerance. A window NT 4.0 Server machine can play many roles in a network. It can be a file server, a database server, or a web server. It performs all of these duties with great success. Windows NT 4.0 Server's minimum hardware requirements are Intel Microprocessor 80486 or higher, 120 MB disk storage, 16 MB memory, and a VGA display or higher resolution. It also can support three kinds of Reduced Instruction Set Chips (RISC) microprocessors. These are MIPS, Digital Alpha, and Power PC Alpha with 150 MB minimum disk storage, 16 MB memory, and a VGA display or higher resolution.

### 2. Novell NetWare

Novell NetWare is a widely accepted network operating system that has started to lose market share against the Windows NT Server. Novell NetWare 5.1 is specially designed for organizations that need a cost effective and reliable network operating system. In the file server role, it is accepted as the fastest server available for medium to large networks, but it only runs programs written for Netware.

The minimum hardware requirements for Novell NetWare are a 486 Based PC or above, 64 MB RAM, and at least 200 MB of free hard disk space.

### 3. Windows 98/ME

Windows 98/ME is not designed to perform a server role but its rich network features make it very suitable for small-scale network environments. It also can handle 32-bit applications. Unfortunately, however, features like overhauling system security, multi-user environment support, and secured file system structures are weaker than the other operating systems. Windows 98/ME minimum requirements are 486/66 MHz based Computer/Processor, 16 MB of memory (RAM), 225 MB of available hard disk space, and a VGA or higher-resolution display.

### 4. Windows 2000 Server

Windows 2000 Server is the newest version of Windows NT. Windows 2000 Server delivers powerful, comprehensive management services for managing the servers, networks, and client systems. Windows 2000 Server has an interoperability with existing systems by providing migration paths from any number of existing systems, devices, and applications. The minimum system requirements for Windows 2000 Server are as follows:

- 133-Mhz Pentium or higher central processing unit (CPU)
- A maximum of four CPUs per computer are supported
- 256 MB of RAM recommended minimum
- 128 MB of RAM minimum supported
- A hard disk partition with enough free space to accommodate the Setup process. The minimum amount of space required is 1 GB'

Windows 2000 Server comes along with Active Directory, an Internet standards-based directory service that uniquely enables flexible policy-based management of systems. Active Directory is a directory service that is scalable, built from the ground up using Internet-standard technologies, and fully integrated at the operating-system level.

It allows a single point of administration for all published resources, which include files, peripheral devices, host connections, databases, web access, users, other arbitrary objects, services, etc [Microsoft, 1997]

Active Directory simplifies administration and makes it easier for users to find resources. Using Active Directory, hierarchical information structures can be built that make it easier to control such things as administrative privileges and also make it easier for users to locate network resources such as files and printers. Hierarchical information structures form a tree structure that reflects all organizational resources. Compared to Windows NT 4.0 that scales quite well up to 100,000 users, Active Directory can scale up to over one million users in a single domain by using indexing technology and advanced replication techniques to speed performance.

## G. DATA BACKUP SYSTEM

The network administrator is responsible for creating a backup plan which assures that the organization can easily recover data if data security is breached. There are three methods used for backing up data and files on a network. These are differential backup or incremental backup, copy, and full backup. A differential backup, also known as incremental backup or daily backup, is used to backup selected files when the content of a file has changed. The backup system reviews the date and time of the file, which indicates the last time the file was updated and compares it with the file. If they differ, then the backup system copies the file. Otherwise, the file is not backed up. A copy backup is used to back up selected files. A full backup copies all the files on a server regardless of whether they changed or not since the last backup. The network

administrator chooses the backup method based upon the efficiency of the backup schedule and the capacity of the backup medium.

All backup software modules must be installed on a server to guarantee the quality of backed-up data. The magnetic tape backup can be used as a common type to provide an effective backup system for our network. A magnetic tape backup is reliable, inexpensive, and has enough capacity to backup the entire network on a single tape.

## H. IMPLEMENTING THE NETWORK

### 1. Standardization

One of the most important aspects of implementing our LAN infrastructure is planning. It is necessary to ensure that every aspect of the implementation has been addressed. Implementation of the Indonesian Eastern Fleet LANs infrastructure begins by establishing standard network architecture to achieve compliance with the Indonesian Eastern Fleet network requirements, compatibility with the naval main bases and fleet units, and to establish an effective and highly reliable network. A standard architecture is needed to provide direction for information technology managers and to define the Indonesian Eastern Fleet information technology strategy.

The IEEE 802.3 Ethernet Network architecture, using Fast Ethernet (100 Mbps) technology, is designed to be implemented on the Indonesian Eastern Fleet's LANs infrastructure. The standardization of network architecture is a critical aspect to implementing an integrated network that is interoperable with other Indonesian Navy networks or with other branch services networks.

Ensuring hardware compatibility is important because each piece of hardware on the network must be able to communicate with other hardware on the network.

Minimum hardware requirements represent values that are sufficient only to allow the system to start. To obtain the best performance out of our network, the appropriate hardware compatibility that meets the Indonesian Eastern network's requirements and allocated budget needs to be determined.

### 2. System Administration

There are three parts of IT support that make our information technology systems success: network operations, system administration, and install/configure/troubleshoot categories. IT support for information systems is a large part of the life cycle costs.

System administration in the Indonesian Eastern Fleet network should conduct a network operations center for monitoring and controlling the operation of our wide area network, and providing reports for a distributed system. A network operations center is responsible for day-to-day operation of the WAN. This accomplished through the monitoring of online statistics including traffic patterns, congestion reports and data from SNMP clients. Many software packages exist which aid in the recognition of network problem areas.

The right choice in selecting a network operating system determine how well the network operation supports distribution and gathering information all fleet units. The implementation of centralized management by using Windows 2000 network operating system is key to improving the Indonesian Eastern Fleet network system. This one step forward in computer communication systems by implementing effective LANs will improve the Indonesian Eastern Fleet information technology systems.

For effectiveness and efficiency, the network operations center (NOC) should be established in the Indonesian Eastern Fleet headquarters LAN in Surabaya.

Centralization is a good strategy to support information systems to all fleet units. The network operations center manages the Indonesian Eastern Fleet wide area network to ensure its up and run properly. However, all other LANs should also have their own network administration unit in each LAN that managed by a local network administrator. We still need decentralization to manage and maintaining the network locally in each LAN. The synchronization between all LANs and the Indonesian Fleet NOC would provide good result in network traffic management as we will prove and evaluate in our network design using EXTENDv4 simulation software program.

The Indonesian Eastern Fleet NOC responsible for communication with the Internet Service Provider, telecommunication carrier company, and contractors in order to obtain and maintain the good quality of the network. By default the role of the NOC falls to the information technology unit coordinated with command, control and communication unit to always provide good service and network maintenance to the network users.

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# V. WEB-BASED WIDE AREA NETWORK DESIGN

Local area network (LAN) is a convenient way to connect machines in a building or in a close proximity. Each location might have its own LAN, but these were isolated from the rest of the organization until someone figured out a way to connect them together into a wide area network (WAN). There are several transmission techniques that can be used, but the simplest is with a modem and a telephone line.

A WAN covers longer physical distances than a LAN. The WAN makes it possible to put the entire organization on the same network no matter how scattered its nodes. The network could be spread across a state, an island or around the whole country. Thus, it is possible for a military organization such as the Indonesian Eastern Fleet to put into operation their own wide area network tying together all naval units in the eastern territory of Indonesia. Implementing web-based technology on the WAN would greatly improve the efficiency of the Indonesian Eastern Fleet information systems.

## A. REMOTE ACCESS SERVICE (RAS)

Remote Access Service (RAS) provides the capability of dialing into our network from a remote location, and acting as a remote node on the network. RAS is often referred to as Dial-up Networking, which communicates with other devices in the telecommunication system using modem at each end of the connection. Both a RAS client and a RAS server require their own modems. The RAS server modem answers a call from a RAS client modem to establish the remote network connection.

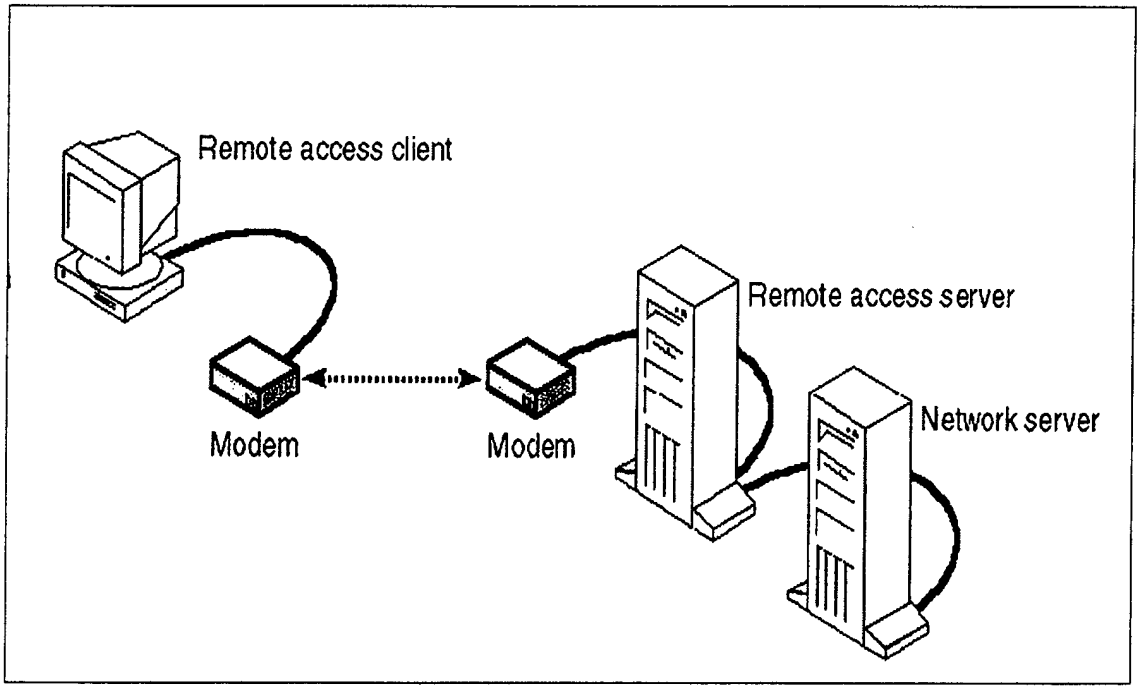


Figure 6. RAS Connection.

RAS supports three connection protocols: *Serial Line Interface Protocol (SLIP), Point-to-Point Protocol (PPP),* and *Point-to-Point Tunneling Protocol (PPTP).* SLIP does not support dynamic IP addressing or NetBEUI or IPX protocols, it cannot encrypt logon information, and it is supported only by RAS clients. PPP overcomes many of the limitations of SLIP. It supports the IPX, NetBEUI, AppleTalk, and DECnet protocols. It also supports encrypted passwords. PPTP provides a way to route IP, IPX, or NetBEUI point-to-point protocol packets over a TCP/IP network.

Using a RAS connection is not always the best choice to achieve network expansion. RAS is used if it is determined that our bandwidth requirements are not greater than 128 Kbps, if a dedicated full-time connection is not required, or if system costs must be kept down. It is not good to use RAS if a higher bandwidth is needed than

that provided by an asynchronous modem or if a dedicated full-time connection is needed.

Virtual private networking (VPN) enables us to securely access our network across the Internet. RAS is very expensive if long-distance is used for access, especially if access is needed for lengthy periods. If there is an account on the Internet using a national ISP that provides unlimited access via local phone, there is a way to securely transmit data over the Internet, and make it all seem as if our network was directly dialed into. It uses Point-to-Point Tunneling Protocol (PPTP) to encase the data in a secure tunnel and transmits it over the Internet to its destination site. Like RAS, VPN uses Dial-up Networking to establish the network connection. VPN can also be used over dedicated analog lines to maintain a permanent network connection to the Internet – and between our organization's websites.

## B. CARRIERS

### 1. Analog Telephone lines

A modem is useless unless it can communicate with another component. All modem communication takes place over some kind of communication line. There are two types of analog telephone lines that can be installed as a modem's carriers for our network: *dial-up connection telephone lines* and *dedicated (leased) telephone lines.*

In *dial-up connections* each session requires that our modem dial a phone number to establish a new session. They are slow and can be unreliable for transmitting data. The quality (speed and reliability) of a session is only as good as the telephone network circuits connected for that particular session. The longer the distance covered by the connection, the less consistency seen in the quality from one dial-up session to the next.

However, for some organizations it may be practical to temporarily use a dial-up communication link between sites for a certain amount of time each day to transfer files and update databases.

*Dedicated lines* provide full-time, dedicated connections that do not use a series of switches to complete the connection. The quality of the line is often higher than the quality of a telephone line designed for voice transmission only. They typically range in speed from 56 Kbps to 45 Mbps or more. PT. TELKOM and PT. INDOSAT, Indonesian telecommunication state-owned companies, provide long distance connection across the sea to the entire country using a satellite system. A leased analog line is faster and more reliable than a dial-up connection. However, it is relatively expensive because the carrier is dedicating resources to the leased connection whether or not the line is being used.

### 2. Digital Lines

Organizations can turn to digital data service (DDS) lines when requiring faster and more secure transmissions than analog telephone lines provide. The primary advantage of digital lines is transmissions over them are nearly 99 percent error free. Digital lines are available in several forms, including DDS, T1, T3, and switched 56. Since DDS uses digital communication, it does not require modems. Instead, DDS sends data from a bridge or router through a device called a Channel Service Unit/Data Service Unit (CSU/DSU). This device converts the standard digital signals that the computer generates into the type of digital signals (bipolar) that are part of the synchronous communication environment. Either analog lines or digital line is a point-to-point links. We use circuit switching network (PSTN, ISDN) over these telecommunication origin

lines, and we use packet switching network (Frame relay, ATM,) over the T1 and T3 lines.

## C. WIDE AREA NETWORK LINK OPTIONS

LANs are not adequate for all fleet units communications. There must be connectivity between LANs and other types of environments. Using components such as bridges and routers, along with communications service providers, a LAN can be expanded from an operation that serves a local area to encompass a wide area network. Most WANs are combinations of LANs and other communications components connected by communication links called WAN links. WAN links can include: packet-switching networks, fiber-optic cable, microwave transmitters, satellite links and cable television coaxial systems.

LAN connectivity and communications in an integrated WAN will involve one of the following transmission technologies:

### 1. Public Switched Telephone Network (PSTN)

Circuit Switching is used in telephone networks. In a circuit-switching network, a dedicated communication path is established between two stations through the network. Data generated by the source station are transmitted along the dedicated path as rapidly as possible. At each node, incoming data are routed or switched to the appropriate outgoing channel without delay.

The same network that our telephone uses is available to computers. One name for this network is the Public Switched Telephone Network (PSTN). PSTN is the most common communication service available in the world, including Indonesia. PSTN channel has W (bandwidth) = 4 Khz, S/N (Signal to noise ratio) = 30 dB or ratio 1000 : 1,

and C (maximum data rate) = 40 Kbps. The fact that the PSTN was designed primarily for voice-grade communication makes it slow. Dial-up analog lines require modems that can make them even slower. Since the PSTN is a circuit-switched network, the connection quality is inconsistent. Any single communication session will be only as good as the circuits linked for that particular session.

### 2. Integrated Services Digital Network (ISDN)

ISDN was the circuit switching that designed to be the digital successor to the existing public switched telephone network (PSTN). As a dial-up services, ISDN requires a basic monthly fee based on connect time or the volume of data transmitted. However, as computer and telecommunication systems improved, the telecommunication carrier cooperated with the Internet Service Provider (ISP) companies to provide the ISDN lease services. In that case, it is necessary to pay more than the regular dial-up ISDN service. ISDN is a standardized telecommunications network architecture providing multi-channel, integrated end-to-end connectivity. It is one of the concepts developed to answer the demands of universal services: transmission of voice, video, data, facsimile, image, and graphics information over digital channels.

Traditional data transmission uses a modem to convert data for the analog channel. With ISDN, digital data transmission does not need to be converted. An ISDN channel consists of 64 Kbps data channels (B=bearer) and 16 Kbps packet signaling channels (D=delta). Services are offered as a basic rate 2B+D (two B channels and one D channel), or a primary rate 23B+D (23 B channels and one D channel). ISDN is offer by Telkom Ltd., Lintas Arta Ltd., and Info Asia Ltd. in Indonesia using a transmission

data rate of 128 kbps, and transmitted through all over the country across the sea using satellite systems by Indosat Ltd. (state owned company).

### 3. T1 Line

T1 is the high-speed digital line that uses two-wire pairs (one pair for transmitting, and the other for receiving) to transmit a full-duplex signal at a rate of 1.544 Mbps. It can be used to transmit digital voice, data, and video signals. T1 line is made up of 24 distinct channels and samples each channel 8000 times per second. Using this method T1 can accommodate 24 simultaneous data transmissions. Each channel sample incorporates eight bits. Since each channel is sampled 8000 times per second, each of the 24 channels can transmit at 64 Kbps. This data rate standard is known as DS-0. The 1.544 Mbps rate is known as DS-1. DS-1 rates can be multiplexed to provide even greater transmission rates, known as DS-1C, DS-2, DS-3, and DS-4.

### 4. T3 Line

T3 is a digital leased line similar to T1, but it operates at much higher data rates. T 3 line is achieving data rates up to 45 Mbps. The cost of T3 line is much more expensive than T1 line. A T3 line represents a bandwidth equal to about 672 regular voice grade telephone lines, which is wide enough to transmit full motion, real-time video, and very large databases over a busy network. A T3 line is typically installed as a major networking artery for large corporations and universities with high volume network traffic.

### 5. OC-3 Line

OC-3 is the ideal solution for customers who seek ultra-fast connectivity for their mission-critical Internet needs. OC-3 connection line operates at 155 Mbps bandwidth

using fiber optic cable. This reliable, high-speed service is ideal for Internet Service Providers, large content providers, search engines, and Web hosting.

### 6. OC-12 Line

For the ultimate in high-speed connectivity, we can choose OC-12 service. Users obtain greater bandwidth flexibility with a 622 Mbps connection. OC-12 service allows customers to sustain numerous simultaneous users on their corporate Web sites and provides users shorter download times. Customers currently using OC-3 service can expand their bandwidth by simply upgrading to OC-12 service, rather than ordering multiple OC-3 lines.

### 7. OC-48 Line

OC-48 operates at 2.4 Gbps. OC-48 fulfills the growing need to service hand-offs in the backbone space with industry leading in-service velocity and reliability. OC-48 connection had robust reliability. It can be used to support a long distance intercity telephony trunks and as large campus backbone.

### 8. OC-192 Line

OC-192 delivers up to 9.6 Gbps of capacity, the highest fiber capacity commercially available in the marketplace. Having provided over 90% of the industry's 10Gbps multi-wavelength systems, OC-192 is the leading high-capacity optical networking system in the world. OC-192 delivers a virtually error free end-to-end bit error ratio of 10-15, a competitive edge for networks that carry mission-critical data traffic. OC-192 is the reliable connection line at the present time. This connection line is still not offer by network provider and telecommunication companies in Indonesia.

### 9. The Analysis of WAN Connection Options

The array of WAN connection choices available will be trimmed down based on our region and what services our telecommunications carrier provides. Once we know what is available, the selection boils down to our specific application and its cost. The issues behind WAN connection options are transmission data rate, capacity, and cost.

Analysis of the WAN connection options:

- PSTN. The cost of PSTN is very cheap. However, the reliability is very low compare with other services. PSTN connection service use modem communication and it is very slow.
- ISDN. This connection service operates fast enough to link all LANs in the Indonesian Eastern Fleet WAN effectively. The reliability is good; the network provider is responsible for transmission error. The cost is inexpensive and meets the network low cost requirement.
- T1 Line is more expensive compare to PSTN or ISDN but it is fast and reliable and can be used for connecting the Indonesian Eastern Fleet WAN effectively
- T3 Line is an advanced network connection technology that operates at 45 Mbps, much faster than T1 line. However, the costs is much more expensive than T1 line.
- OC-3 connection line is a high speed and secure service based-on fiber optic cabling system. High speed data transfer is possible due to the virtually unlimited bandwidth of fiber optic. However, this connection service is very expensive.
- OC-12 line is faster than OC-3. It operates on fiber optic cable at 155 Mbps. Fiber optic cable also makes our network secure and is considered to be virtually error free. The cost of this connection is more expensive.
- OC-48 line is much more expensive than OC-12 and operates at 2.4 Gbps. It is an emerging technology based on fiber optics. It is highly reliable but is very expensive.
- OC-192 is the newest connection line with a very high speed transmission. However, this connection line still not offered by the network provider in Indonesia at the present time.

The main goals in making technology choices for the Indonesian Eastern Fleet WAN design in this analysis are low cost, effectiveness, and efficiency. From the array

of analysis we come to conclusion that ISDN is the most appropriate choice for the Indonesian Eastern Fleet WAN design. ISDN meets the Indonesian Eastern Fleet network requirement for low cost, reliability, and capacity. We recommend that eventually, as finances permit, the Indonesian Eastern Fleet migrate to T1 Lines 1.544 Mbps for its WAN connection service. This fully digitized channel will answer the demands of multirate signal voice, data, video, image, and graphic information.

## D. WAN CONNECTIVITY DESIGN

### 1. Connecting LANs to the Internet in a Packet Switching Network

A WAN is constructed from many switches to which individual routers connect. The initial size of a WAN is determined by the number of sites and the number of computers connected. The basic electronic switch used in a WAN is called a packet switch because it moves complete packets from one connection to another. A packet switch contains two types of input/output (I/O) connectors: one type is used for other packet switches, and the other is used to connect to computers. In packet switching, packets are relayed through stations in a computer network along the best route currently available between the source and the destination. Each packet is switched separately.

Wide area network interfaces are incorporated into remote bridges that are designed to provide an internetworking capability among all geographically dispersed LANs linked by a WAN. ISDN connection service links all LANs in the Indonesian Eastern Fleet WAN. The basic concept behind ISDN is end-to-end digital connectivity, or a completely digital signal all the way from the sender to receiver and vice versa. The Cisco 1003 ISDN router connects remote sites with Ethernet LANs to a WAN using ISDN at speeds up to 128 Kbps; with 4:1 data compression, raw throughput speeds up to 512 Kbps [Ref. Tittel, 1996]. The Cisco 1003 has a built-in ISDN Basic Rate Interface

(BRI) port, a 100Base T Ethernet port, a console port, and an external Personal Computer Memory Card International Association (PCMCIA) slot for a Flash ROM card. This plug-and-play product is designed to be installed easily by non technical personnel at remote sites. The Cisco 1003 ISDN router supports two software feature sets, based on the Cisco Internetwork Operating System (Cisco IOS). One set includes IP routing and transparent bridging. Both software sets support Point-to-Point Protocol (PPP), compression, dial-on-demand routing (DDR), and a host of other powerful features for optimizing WAN bandwidth and cost. Figure 7 illustrates the Ethernet Backbone and Internet Connection configuration for the Indonesian Eastern Fleet Network.

### 2. WAN Connectivity Plan

Figure 8 is a map of the eastern region of Indonesia in which all naval units of the Indonesian Eastern Fleet conduct daily sea operations to maintain sovereignty and law enforcement at sea. Figure 9 shows our "WAN connectivity plan" designed to link all Fast Ethernet LANs in the Indonesian Eastern Fleet network using ISDN connection service as an integrated web-based WAN.

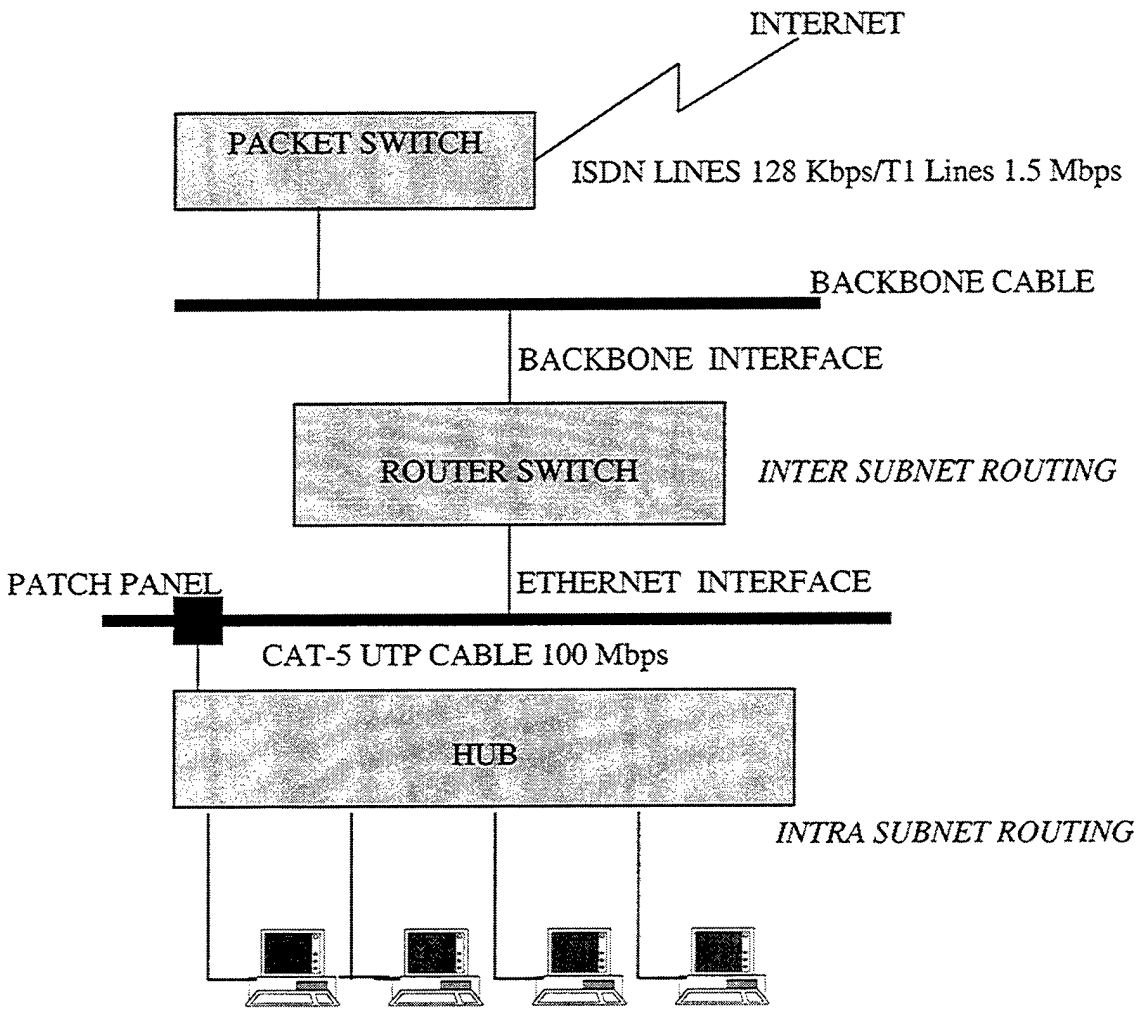


Figure 7. Ethernet Backbone and Internet Connection.

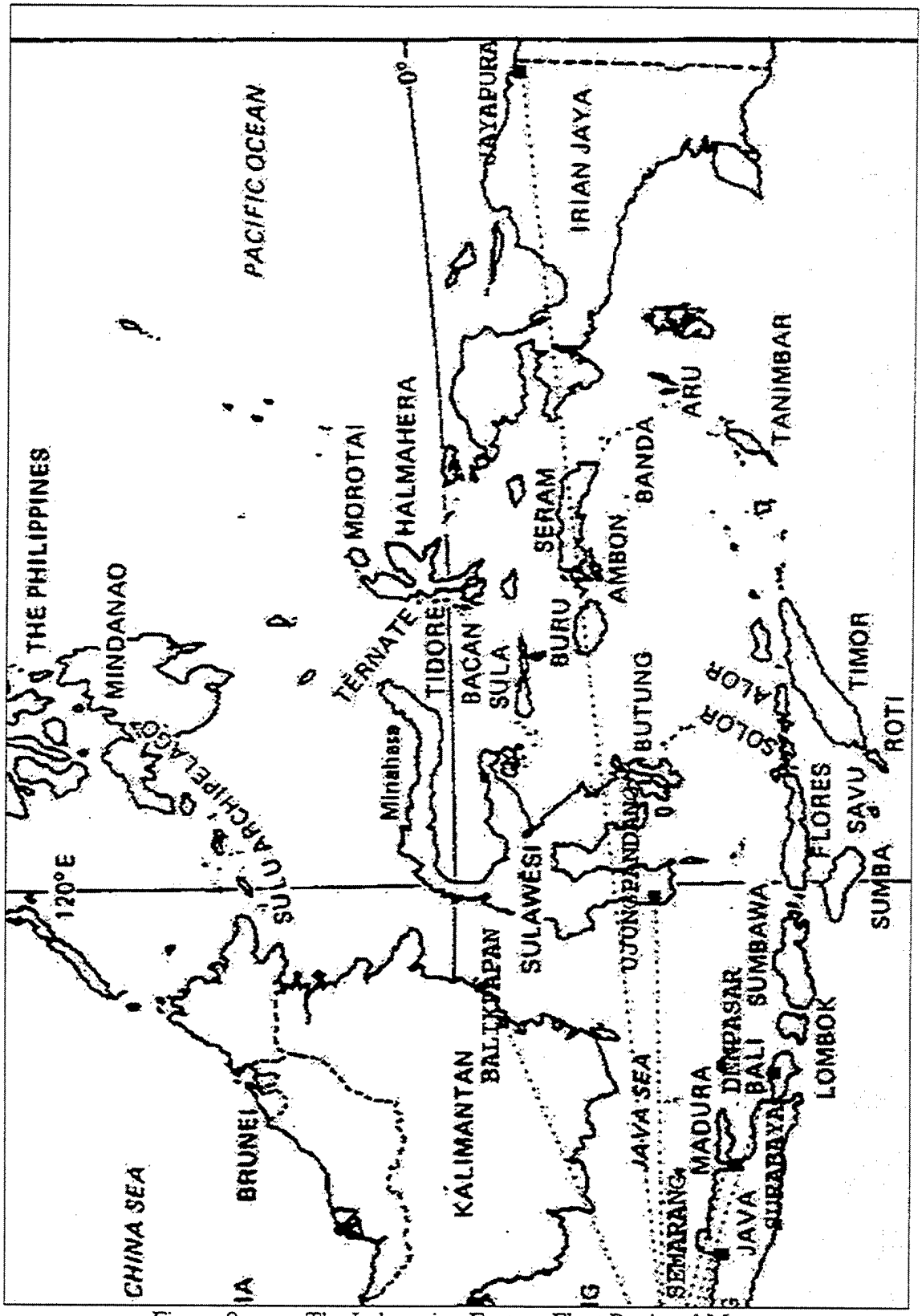


Figure 8. The Indonesian Eastern Fleet Regional Map.

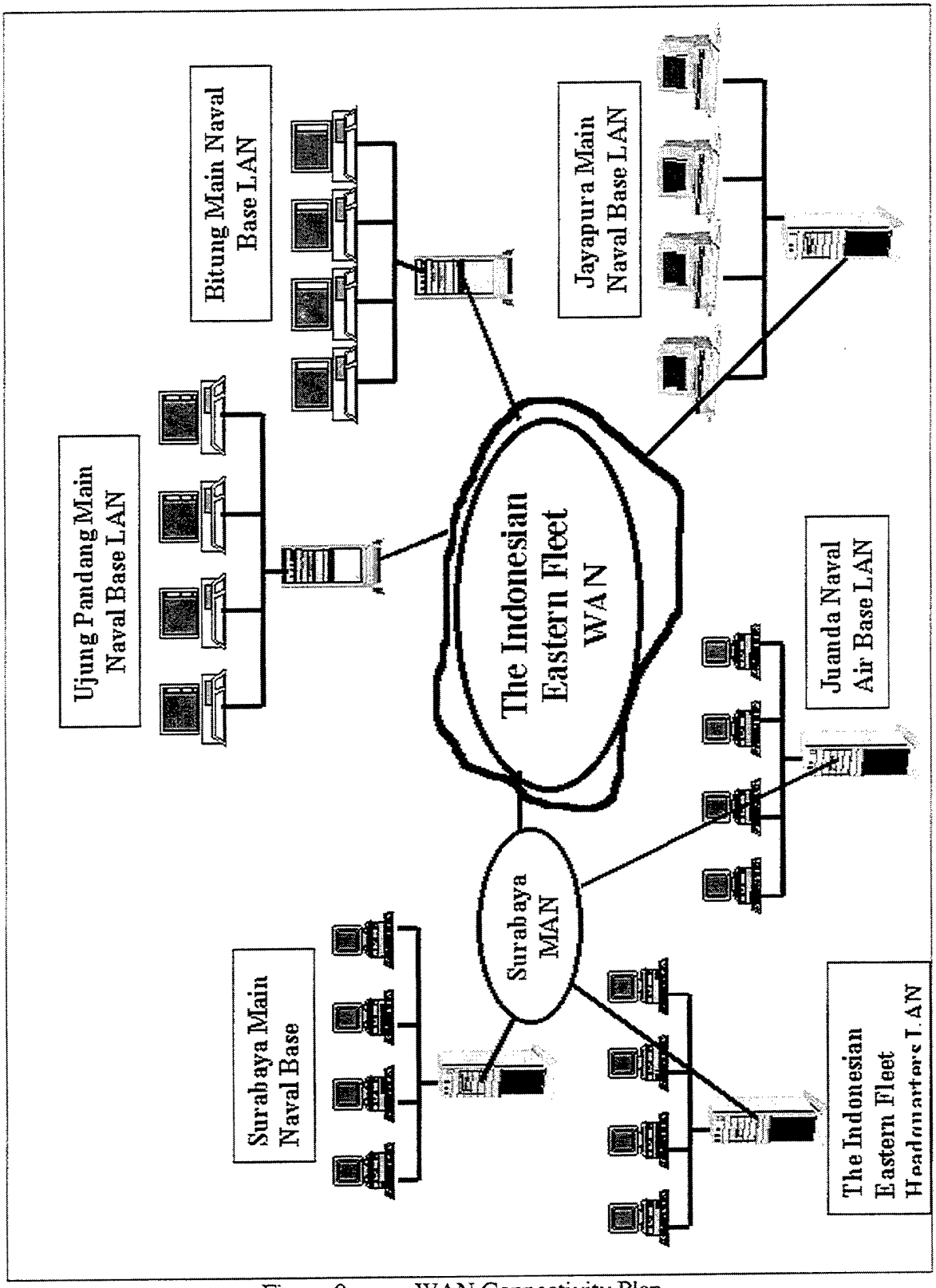


Figure 9. WAN Connectivity Plan

## H. WIDE AREA NETWORK OPERATING SYSTEM

As mentioned in the previous chapter, Windows 2000 Server is the appropriate choice for the Indonesian Eastern Fleet's web-based WAN operating system. It integrates user's desktops with the Internet, thereby removing the distinction between the local computer and the Internet. Windows 2000 Server includes Microsoft Internet Information Server (IIS 5.0), a secure Web-server platform used to host Internet Web sites on network servers.

Windows 2000 Server ensures network security by authenticating users before they gain access to resources or data on a computer or the network. It provides local auditing for files, folders, printers, and other resources.

Networking and communication services are the main goals of the Indonesian Eastern Fleet network. Windows 2000 Server provides built-in support for the most popular network protocols, including TCP/IP and IPX/SPX. It provides dial-up networking, which lets mobile users connect to a computer running Windows 2000 with the capability of 256 simultaneous sessions.

## I. WEB SERVER

Web servers make information available on a computer connected to the Internet, and web browsers show us information stored on a web server over the Internet. A web server receives requests for information from a client via the Internet and after processing these requests and checking their validity, retrieves or generates the desired information and transmits it back to the client. Every computer on the Internet that contains a web site must either have a web server or upload the web site files to a computer that has a web server.

### 1. Web Server Software

Most large network systems use an Apache server while the smaller systems primarily use Microsoft's Internet Information Server 5.0 (IIS 5.0). The Apache server delivers the ultimate in flexibility and extensibility. Its modular design allows a Web administrator to build an application-specific binary, especially for the requirements of that installation.

Considerations in choosing a web server include how well it works with the operating system, its ability to handle server side programming and publishing, search capability, and web site construction tools that may be included. The software to be used for a web server is closely related to the hardware platform that will host the web server. Microsoft provides IIS 5.0 bundled with Windows 2000 Server, which means that we do not have to purchase it as an additional software package. IIS 5.0 is a high performance web server containing many improvements compared with the previous IIS versions. In addition, IIS 5.0 provides performance application protection security enhancements. For these reasons IIS 5.0 is the most appropriate web server for the Indonesian Eastern Fleet network.

### 2. Web Browser Software

A web browser is a program that is used to view and to access web pages that exist on various web sites. The web browser has the job of processing received pages, parsing HTML code, and displaying the page to the user. The browser will attempt to display graphics, database tables, forms, formatted text, or whatever the page contains. The most popular web browsers now in use are Microsoft Internet Explorer, Netscape Navigator, and Mosaic. The types of computing platforms we use can influence the

selection of an appropriate browser. So, first we have to check the operating systems that run under the respective hardware platforms and the versions we need. Another consideration is the browsers' Java-capability. It is better to test web pages using multiple browsers to ensure the final output appears as intended.

### 3. Middle ware Network Protocol

A necessary aspect of setting up an Internet environment in a company is to select a specific protocol for use on the corporate network. The protocol that is widely used for Internet technologies is known as the Transmission Control Protocol/Internet Protocol (TCP/IP). This protocol can operate on Ethernet local area networks, on various Wide Area Networks (WANs), and even over standard telephone lines that are connected to a modem.

### 4. How Web Browsers and Servers Work

The basic task of a web browser is to retrieve a web page from a specific location in cyberspace then display the page according to the rules of HTML. The Uniform Resource Locator (URL) of a web page is its address on the net. Another program, known as a web server, is waiting at this address. When a user types a URL into a web browser, the browser "travels" to the address and "asks" the web server for the desired web page. If the server has the page, it "gives" it to the web browser via a TCP connection. The web browser then displays the page to the user. In the client/server programming model a server awaits and fulfills requests from client programs in the same or other computers. A given program (application) in a computer may run as a client which requests services from other programs and as a server of requests from other programs.

## J. APPLICATION SERVER

There are some choices of application server such as IBM WebSphere Application Server 3.02, Oracle*9i* Application Server, Netscape Application Server and ColdFusion that commonly used at the present time. Application servers provide the foundation for integrating browser, server, and database technologies into web applications. It gives developers a tool for creating dynamic web applications and interactive sites.

ColdFusion uses a flexible server-side markup language that seamlessly integrates with HTML called ColdFusion Markup Language (CFML). CFML gives the ability to control the behavior of applications, integrate a wide range of server technologies, and generate the content that is returned to the web browser. When a page in a ColdFusion application is requested by a Web browser, it is automatically pre-processed by the ColdFusion Application Server. Based on the CFML in the page, the Application Server executes the application logic, interacts with other server technologies, and then generates an HTML page and returns it to the web-server. The web-server returns the page to the user's web browser.

IBM WebSphere Application Server is an e-business application deployment environment built on open standards-based technology. We can use Java servlets, JavaServer Pages and XML to quickly transform static web sites into vital sources of dynamic web content. IBM WebSphere Application Server offers qualities of service such as scalability, performance, security, and availability.

We also can build and modify web-sites and applications using Oracle9*i*. We can create personalized portals, manage and secure our website infrastructure.. Once our

Web site is deployed, Oracle9*i* Application Server has built-in reporting and ad-hoc query and analysis functionality to derive business intelligence. This enables us to make rapid and accurate decisions to improve operating efficiencies.

Considerations in defining an application server include how well it works with the operating system (Windows 2000) to meet the Indonesian Eastern Fleet network requirements in effectiveness and efficiency. One advantage of Cold Fusion is that a developer does not need to know any scripting language to be able to create effective Web database applications. The tags that start with CF prefix are Cold Fusion tags. The Cold Fusion Server handles these special tags. For the purpose of this network design the author suggest the Indonesian Eastern Fleet network use ColdFusion Server 4.5 Professional running on Windows 2000 Server with Internet Information Server 5.0.

## K. DATABASE SERVER

IBM DB Universal Database, Microsoft SQL Server 2000, and Oracle Database are the widely used database server software in most corporate and organizations at the present time. Databases simplify the collection and maintenance of data and facilitate querying and displaying data in a wide variety of formats. Using tables, a lot of information that is related in simple or complex ways can be organized and managed.

Since we chose Windows 2000 Server as our network operating system, we can use Microsoft SQL Server 2000 as the database server software for the Indonesian Eastern Fleet network. SQL 2000 server has good support for Web standards and systems management. Microsoft SQL 2000 is robust and can be use properly in large or medium network such as in the Indonesian Eastern Fleet network. It also offers users an

XML environment and a data mining feature in Analysis Services which can be used to discover information in OLAP cubes and relational databases.

## L. MANAGING THE WIDE AREA NETWORK USING WEB-BASED TECHNOLOGY

### 1. The Advantages of Using Web-Based Technology

The Internet is a global grid of networks enabling computers to directly and transparently communicate and share services throughout much of the world. Using a computer and an Internet Service Provider (ISP) connection, we can get access to the entire worldwide public data network without restriction. If we have the proper equipment on our computer, we can also provide information to the rest of the world. Web based information systems help unify all forms of documents, data, sound, pictures, movies, messages and computer applications in ways we never imagined before [Ref. Harler, 1999]

An effective and efficient network will provide reliable information systems as required to support the Indonesian Eastern Fleet operations. Web-based technology gives the advantages by providing efficiency to achieve the main goal of the Indonesian Eastern Fleet. Various operating systems are used in diversified Indonesian Eastern Fleet office units, including Windows 3.1/ 95/98/ME and Windows NT 4.0/Windows 2000. Using Web-based technology, a variety operating system can be linked together. Web-based technology is designed for use in a networked environment, containing desktop computers using various operating systems. It is device-independent and works well in a cross-platform environment. The main requirement is that the network supports TCP/IP communications.

Web-based technology can be used productively for improving communications between widely separated work groups-especially those that operate on interconnected LANs spread across the sea in the entire eastern fleet region. Connectivity is the key word in using web-based technology. Its ease of access provides the ability to get to key management sites from anywhere in the eastern region. The use of web-based technology makes it possible for the Indonesian Eastern Fleet to save money and operate their units more efficiently by letting widely dispersed desktop computers share mission essential resources.

### 2. Network Management

The main goal in managing the WAN is to control, monitor, and run the network in such a way as to insure its proper operation. We must attain a reliable end-to end service to ensure the network users share information and transfer data. Network management system are divided by the International Organization for Standardization (OSI) into five functional areas:

- Fault management
- Performance management
- Configuration management
- Accounting management
- Security management

Fault management is the function of detecting, isolating, and correcting faults in the system. The network manager has the ability to quickly detect problems and initiate recovery procedures. Fault management is very important because time is a critical factor in supporting information systems to all naval units via the network.

Performance management is the function of monitoring and controlling the system's resources. Managers have to monitor and control that the network has the capacity to accommodate users' needs using performance management tools. Performance can be measured by error rates, percentage utilization, overall throughput, and response time.

Configuration management is the function of manipulating hardware and software while still maintaining the system. It is the process of keeping in touch with all network devices. Configuration management helps the network manager to compare the running configuration with that stored in the system.

Accounting management is the function of tracking the system's resources and charging them to users. Accounting management gathers network statistics to help the network manager makes decisions regarding the allocation of network resources.

Security management is the function of protecting the system from human error, direct probing, subversion, penetration, and abuse of authority. It adopts proper encryption techniques and security logs.

The network manager is able to communicate with element of the network and monitor and control the running network by using network management protocols. The network management protocol most commonly used to manage a WAN is Simple Network Management Protocol (SNMP). SNMP is widely used and many vendors of network components design their products to support SNMP. It provides the tools needed to gain management information from the network, and is conform to the OSI seven-layer model. SNMP combines:

- Management Information Base = MIB. It is a database of configuration and statistical information on the network device. MIB collects all the objects that SNMP can manage.
- A Management station
- A management agent. The management agent is resident in the network components such as hubs, bridges, routers, and hosts, providing the management station with important information.

SNMP exchanges network information through messages (Protocol Data Units = PDU) that can be seen as an object containing variables with both titles and values. The operation of SNMP can be broken into three basic commands: *get, set,* and *trap.* These commands utilize the MIB to obtain and manipulate data pertaining to objects. *Get* allows a manager to obtain data from an object. *Set* allows a manager to change or update data from an object. *Trap* sends data automatically from an object to a manager when certain thresholds are exceeded. Through the use of MIBs, SNMP agents can be installed that allow managers to monitor specific objects. SNMP has the advantages of its simple design and ease to implementation in large networks.

Besides SNMP there are some other network management protocols such as Remote Network Monitoring (RMON), and Switch Monitor Management Information Base (SMON).

### 3. Web-Based Network Management

In order to use the WWW infrastructure for network management, Hyper Text Transport Protocol (HTTP) is used as an interface layer between the devices that use SNMP. HTTP servers provide information that can be retrieved by web-browsers using HTTP protocol. HTTP is a stateless information retrieval protocol based on a TCP/IP suite. The retrieved information can be specified in several formats including graphics, text, binary, and Hyper Text Markup Language (HTML). HTTP does not replace such

network protocols as SNMP. In order to manage network resources using HTTP it is necessary to have an application which speaks both HTTP and SNMP. This can be achieved in two ways by extending standard HTTP servers and creating a proxy application which allows it the issue of SNMP protocol requests using HTTP. It is relatively easy to implement since the HTTP server transparently handles the HTTP protocol. Existing character-based network management applications can easily become Web-aware since it is straightforward to enrich the textual output with HTML tags.

Web-based network management using Java is common and widely used at the present time. The Java management application programming interface (JMAPI) supports SNMP and is based around the Java programming language. It takes the advantage of the same extensions and capabilities of Java. It consists of a manager browser in the Network Management System (NMS), and an intelligent Java engine in the agent. The manager browser monitors and controls network elements in the network. The communication between the NMS and the agent is carried out by Java classes using TCP sockets.

Web-based Enterprise Management (WBEM) is another model that merges SNMP with HTTP. WBEM is an initiative based on a set of management and Internet standard technologies developed to unify the management of enterprise computing environments. It provides the ability for the industry to deliver a well-integrated set of standards-based management tools leveraging the emerging web technologies such as HTML and XML. WBEM facilitates the use of the same terms and formatting in management applications so that the applications can communicate and users can more

easily compare information from different application and devices. It comes with three elements:

- HyperMedia Management Protocol (HMMP): an object-oriented management protocol implemented on top of HTTP
- HyperMedia Object Manager (HMOM): a data model to incorporate different information sets
- HyperMedia Management Schema (HMMS): an object oriented data model for representing the managed environment

### 4. Implementing WBEM

The smoothly run wide area network is essential to the operation of the Indonesian Eastern fleet mission critical. We cannot tolerate a lot of down time occurred in our network system. Therefore, network management is a fundamental requirement of our network. The network management keeps our network devices up and running.

SNMP and the network management consoles including WBEM are useful tools. In order to implement WBEM in our network we have to have management agents reside in all network components. We can use HP OpenView to help us manage our network by giving a clear view of its components, including not only hardware such as routers and hubs, but SNMP objects such as applications and databases as well. We should create customized views to reflect our organization's information needs. Performance and trend reporting show us in real-time how our systems are performing. Using HP OpenView as a network management tool allows the management agents reside in the network components such as hubs, bridges, routers, and hosts. A management agent plays an important role in network management systems by providing the management station with important information. Our legacy gear such as radio transmitter would also have agents in them. Further, our telecommunication stuff such as ISDN switches would have

telco-proprietary management interfaces using the functionalities of HP OpenView network management tool.

The implementation of WBEM needs tools that identify and solve performance problem of our network. The tools must monitor, diagnose, trend and even predict server performance. HP OpenView delivers integrated tools to solve those performance problems. In addition to managing devices like routers, bridges, and hubs, the HP OpenView Extensible SNMP Agent allows us to manage applications, printers, users, and databases that are central to business success. Network managers can configure new SNMP objects without programming. With support of all types of management information base (MIB) objects, we can completely customize network and systems management to include objects that meet our needs.

Web-based network management systems using the functionalities of complex platforms such as HP OpenView allow managers to specifically obtain or manipulate the desired information by simply typing the required data sets. Web-based interfaces can supplement the network management system by allowing managers to access information in another format on top of such products as HP OpenView by simply selecting an option in OpenView's drop down menu.

The use of a web-based network management tool provides the ability to manage objects directly from a web-based management station. The web-pages are accessed via an ordinary web browser, such as Internet Explorer or Netscape Navigator, that interfaces with HP OpenView-Network Node Manager (HP-NNM). HP-NNM manages objects on the network and would feed the status of the objects via MIBs.

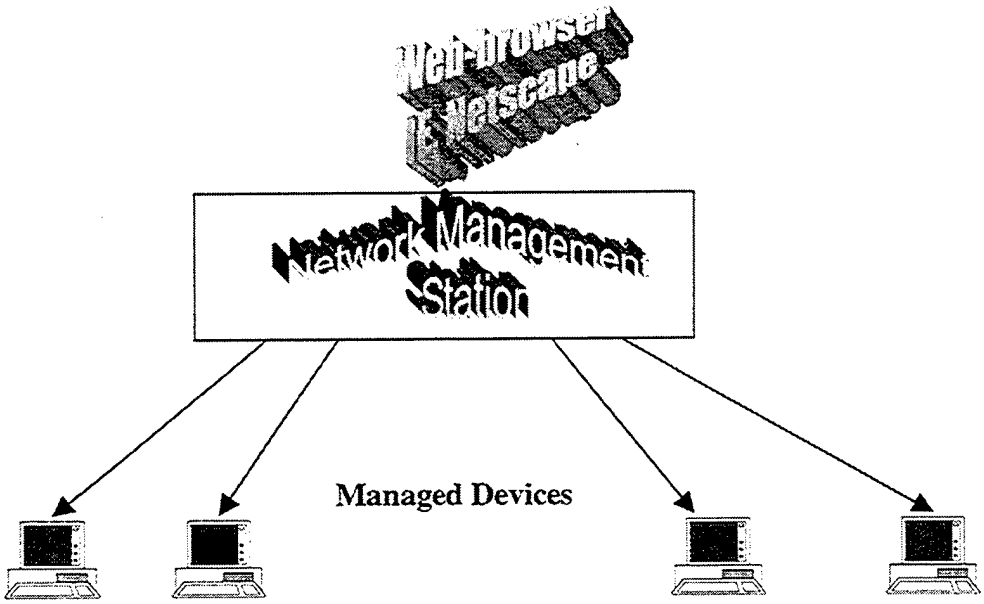


Figure 10. Web-based Network Management

By using "automated device discovery and layout" HP-NNM discovers TCP/IP and layer 2 devices on both LANs and WANs and presents this information in a graphical format. It continuously monitors the network for new devices and for the status of previously discovered equipment [Green, 1999]. It also has user interface based on Java™ that provides easy access to network maps and enables management of data from anywhere on the web. The purpose of its map is to illustrate the structure of the network and the status of devices and segments.

WAN connectivity can be achieved in a manner which optimizes economy and design. The management and maintenance of the Indonesian Eastern Fleet network is simplified through standardization. Simple Network Management Protocol (SNMP) clients and WAN management applications using HP OpenView are valuable tools to assist personnel in the management of a WAN. The web has emerged as a new paradigm in information access and display, becoming the preferred method for accessing

corporate data over the network. Web technologies can serve as an excellent infrastructure for simple and powerful tools to address the current problems of network management systems. Web-based tools can provide portability across platforms and a good framework for network management application architecture. Managing the WAN can significantly benefit from the use of web-based technology, such as easy-to-reach information, operation reuse, and consistency in presenting and accessing information and objects.

## M. TRAINING PROGRAM

The site network administrators require training in network administration particularly in troubleshooting problem area. A clear path for troubleshooting and points-of-contact needs to exist and be understood by local administrators. The majority of network errors encountered throughout the implementation phase have been unrelated to WAN connectivity. This would reduce the burden of the WAN administrators.

Training program should be conducted in order to ensure the network always running well because its managing by the right personnel that has been trained properly. Network management needs the implementation of the process of using hardware and software by trained personnel to monitor the status of network components. They also monitor line facilities, question end users and carrier personnel, and recommend actions to alleviate outages and improve communications performance as well as conduct administrative tasks associated with the operation of the network. The training program for network administrators designed such a thing so that they knows the system's features and the functions and has knowledge about how to use and maintain the network management system.

Beside network administrators, the network operators also should be trained. Network operators responsible for operating the network in each LAN. They report the condition, status and operation of the network regularly to a network administrator. The trained network operators would recognize that WAN connectivity is exists or not.

People who will be trained should be the potential personnel that is required to support their unit organization and has a background in computer skills. The training program will take place in the computer training facility in the Eastern Fleet Training Command in Surabaya. Personnel that would be trained should be the military personnel from information technology units and also from command, control and communication units of each main naval base.

For network administrators, their ranks should be First Class Petty Officer until Ensign (E-6 until O-1). Windows 2000 MCSE certification exam should be used as a quality measurement for a network administrator and the training program should be executed based upon its syllabi. After completed the training these personnel are qualified as the network administrator which has a responsibility to maintain a set of procedures, software, and operations in order to keep a network operating near maximum efficiency. The success of any information system in each LAN depends on the skills of network administrators.

The ranks for network operators would be Third Class Petty Officer and Second Class Petty Officer (E4 and E5). The trained Second Class Petty Officer would responsible for operating HP OpenView tools. Their place of work would be in the Indonesian Eastern Fleet Network Operation Center in Surabaya. Third Class Petty

Officer would responsible for all network devices and they would be placed in each main naval bases LAN.

The qualification process is based on their experience and ability in computer communication systems. The selection process for network administrators and network operators personnel could bring an improvement to Navy's return of investment. This training program is a career cycle for all personnel that had been trained, not just once. The well trained personnel would have value added that support his job and promotion. Network management required complex and continuously program including training to provide the optimal solution in improving the Indonesian Eastern Fleet information technology systems.

# VI. PROPOSED WAN DESIGN USING EXTEND-4 SIMULATION SOFTWARE PROGRAM

This chapter explores the use of modeling and simulation as a tool in designing and evaluating the Indonesian Eastern Fleet network system. The author has developed a wide area network (WAN) design model using an object oriented modeling and simulation tool called EXTEND-4 made by Imagine That, Incorporated. EXTEND-4 is used to measure specific performance variables in a quantitative fashion. It is an easy to use graphical simulation tool that allows a user to model complex discrete or continuous systems while varying performance parameters. EXTEND-4 makes it easy for the user to recognize and configure Graphical User Interface (GUI) icons with predefined properties that are adaptable to represent steps and links in a process.

## A. ESTIMATING NETWORK TRAFFIC DATA REQUIREMENTS

The network traffic data requirements were used as a source to compute the flow of network messages all over the WAN for modeling and simulation. Each LAN in this network design uses Fast Ethernet 100BaseT LANs architecture that shares a network media 100 Mbps CAT-5 UTP cable. All LANs are linked by ISDN 128 Kbps WAN service and connected by the Cisco 1003 ISDN router. As the second alternative we use T1 line 1.5 Mbps to offer the best solution for network performance.

The messages are delayed in the Ethernet LAN by 100 Mbps CAT-5 UTP bandwidth, and in the wide area network by the WAN connection bandwidth. Currently the Indonesian Eastern Fleet network exhibits worst case delays of approximately 10 minutes. There is no set requirement on e-mail traffic; delivery within a few minutes is

desirable although a few hour delays are usually acceptable. Video is presently sent only within the headquarters LAN and delays are consistent with medium quality video. Data transfer delays are currently approximately 3 to 5 minutes going from one Indonesian Eastern Fleet LAN to another Indonesian Eastern Fleet LAN. Any new network must meet, or preferably reduce, these data latencies.

Network traffic involves email traffic volume, video conferencing network traffic, and data transfer traffic volume which are counted per one workday which is equal to 12 hours. The result of this sum in Mega bits is multiplied by 8, to convert to Mega bytes per day, and then divided by (12hours x 60 minutes x 60 seconds) to provide the result of message sizes in bytes per second that would be sent to destinations all over the WAN.

In this network model 45 computers are represented as one node. Thus, for example, the Surabaya main Naval base LAN that consists of 225 computers has a total of 225 nodes: 45 = 5 nodes. Network traffic for one node is the aggregated traffic of 45 computers. This simplification was done in order to keep the network model reasonably sized. There are total 24 origin nodes and 24 destinations in our WAN design. The detail lists are shown at the estimated network traffic data of the Indonesian Eastern Fleet WAN design as follows:

1. **Surabaya Metropolitan Area Network (MAN)**

   a. ***Surabaya Main Naval Base LAN***

- Ethernet LAN transmission data rate = 100 Mbps
- WAN Bandwidth using ISDN = 128 Kbps, using T1 line = 1.5 Mbps
- Total computers = 225
- Total nodes = 225: 45 = 5
- Email traffic volume = 26 Mbits per day
- Video conferencing network traffic = 2340 Mbits per 30 minutes per day

- Data transfer (text, image, graphic) traffic volume = 68 Mbits per day
- Average total traffic rate = 7040 bytes per sec

*b. The Indonesian Eastern Fleet Headquarters LAN*

- Ethernet LAN transmission data rate = 100 Mbps
- WAN Bandwidth using ISDN = 128 Kbps, using T1 line = 1.5 Mbps
- Total computers = 315
- Total nodes = 315: 45 = 7
- Email traffic volume = 40 Mbits per day
- Video conferencing network traffic = 2730 Mbits per 35 mnts per day
- Data transfer (text, image, graphic) network traffic = 96 Mbits per day.
- Average total traffic rate = 8290 bytes per sec

*c. Juanda Naval Air Base LAN*

- Ethernet LAN transmission data rate = 100 Mbps
- WAN Bandwidth using ISDN = 128 Kbps, using T1 line = 1.5 Mbps
- Total computers = 90
- Total nodes = 90: 45 = 2
- Email user traffic volume = 10 Mbits per day.
- Video conferencing network traffic = 1170 Mbits per 15 mnts per day
- Data transfer network traffic (text, image, graphic) = 24 Mbits per day
- Average total traffic rate = 3480 bytes per sec

**2. Ujung Pandang Main Naval Base LAN**

- Ethernet LAN transmission data rate = 100 Mbps
- WAN Bandwidth using ISDN = 128 Kbps, using T1 line = 1.5 Mbps
- Total computers = 180
- Total nodes = 180: 45 = 4
- Email user traffic volume = 20 Mbits per day
- Video conferencing network traffic = 1950 Mbits per 25 mnts per day
- Data transfer network traffic (text, image, graphic) = 50 Mbits per day
- Average total traffic rate = 5840 bytes per sec

**3. Bitung Main Naval Base LAN**

- Ethernet LAN transmission data rate = 100 Mbps

- WAN Bandwidth using ISDN = 128 Kbps, using T1 line = 1.5 Mbps
- Total computers = 135
- Total nodes = 135: 45 = 3
- Email user traffic volume = 15 Mbits per day.
- Video conferencing network traffic = 1560 Mbits per 20 mnts per day
- Data transfer network traffic (text, image, graphic) = 36 Mbits per day
- Average total traffic rate = 4660 bytes per sec

**4. Jayapura Main Naval Base LAN**

- Ethernet LAN transmission data rate = 100 Mbps
- WAN Bandwidth using ISDN = 128 Kbps, using T1 line = 1.5 Mbps
- Total computers = 135
- Total nodes = 135: 45 = 3
- Email user traffic volume = 15 Mbits per day.
- Video conferencing network traffic = 1560 Mbits per 20 mnts per day
- Data transfer network traffic (text, image, graphic) = 36 Mbits
- Average total traffic rate = 4660 bytes per sec

## B. NETWORK MODELING AND SIMULATION

We use the blocks from the EXTEND-4 standardized libraries of process objects. These blocks are designed to facilitate the rapid development of simulation models of queuing systems by dragging and dropping them from the library to the model workspace. The three most-used libraries that come with the basic EXTEND-4 package are Generic, Discrete Event, and Plotter Libraries [Diamond, 1997]. The Generic Library is used for continuous modeling and the Discrete Event library is used for discrete event modeling. The Plotter library holds all the common types of plotters used in our models. Some of these plotters are specific to continuous or discrete event models, while others can be used with either. Models can be built to simulate discrete events or continuous flow problems. The different libraries that are built into the application are generally

application are generally designed specifically for one or the other. However, many objects within the libraries are interchangeable with either type of model

EXTEND-4 uses two main types of blocks in its simulation program: item blocks and attribute blocks. Item blocks receive and process discrete events or items that pass through them. Attribute blocks receive and process attribute values associated with items, although the items do not specifically transit through these blocks. The flow of the model is determined by the order of the connections between blocks of the model.

The actual moving of items between blocks is done through a messaging communication structure using item connectors and connections. This messaging system allows modelers to place blocks in a more intuitive sequence. Discrete event blocks send messages to each other during the course of a simulation run. These messages are used for communication regarding whether items are available, whether they have been taken, and whether a block is free to receive items.

In this network design, the blocks are grouped together as a hierarchical block and represented as custom blocks in the model workspace. A hierarchical block is unique. It has some characteristics of a block and some characteristics of a model worksheet. Hierarchical blocks have two windows: the layout pane window, which can be seen by double-clicking on a hierarchical block, and the structure window. The structure window contains another view of the layout pane, and we build a new hierarchical block or make changes to an existing hierarchical block's icon, connector position, and so forth. When a hierarchical block is opened by double-clicking on it, the layout of the submodel can be seen in the hierarchical window.

The first step in building the network model is to develop the model of each local area network (LAN). EXTEND-4 provides the blocks necessary to construct the LAN model using communications component logic that was built based upon the Carrier Sense Multiple Access/Collision Detection (CSMA/CD) Fast Ethernet LAN architecture using the CAT-5 UTP 100 Mbps cabling system. All LANs are linked up together as an integrated wide area network (WAN) using the ISDN 128 Kbps/T1 Line 1.5 Mbps. The model descriptions are intended to provide a basic working knowledge of the model.

### 1. Generating the Message

The messages for the network traffic come from the origin message hierarchical blocks in each LAN. Figure 10 shows the high level hierarchical block of messages originating at node 1, and Figure 11 shows detailed view or the layout of the submodel in the node 1 hierarchical window.

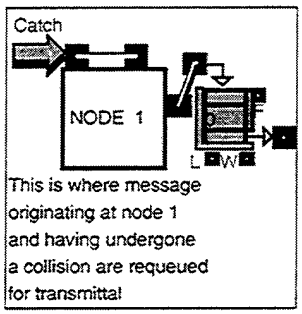


Figure 11. High Level View of the Origin Message Hierarchical Block

Node 1 represents the first 45 workstations at the Surabaya main Naval base LAN. The Surabaya main Naval base LAN has 225 computers that can be substituted to 5 nodes: Node 1, Node 2, Node 3, Node 4, and Node 5.

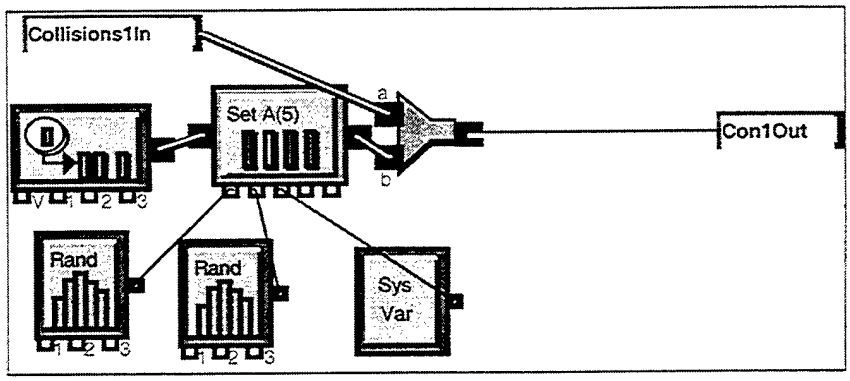


Figure 12. Detailed View of the Origin Message Hierarchical Blocks.

Each node generates messages that consist of e-mail, video conferencing, and data transfer with a certain amount of average message traffic rate already discussed in the previous section. The messages are generated by the "Generator" program block in these nodes with a certain message size that are defined by the Set Attribute program block. The generator provides items for a discrete event simulation at specified interarrival times. Each block has a dialog box that allows for customization of its performance parameters. The parameters for the distribution arrival times are set in the dialog box. At the first run of the Simulation, the exponential random distribution with frequency 1 second is used. For the second run of simulation, frequency 0.5 second is used. Figure 12 shows the generator program blocks and Figure 13 shows its dialog box.

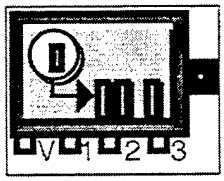

Figure 13. Generator Program Block.

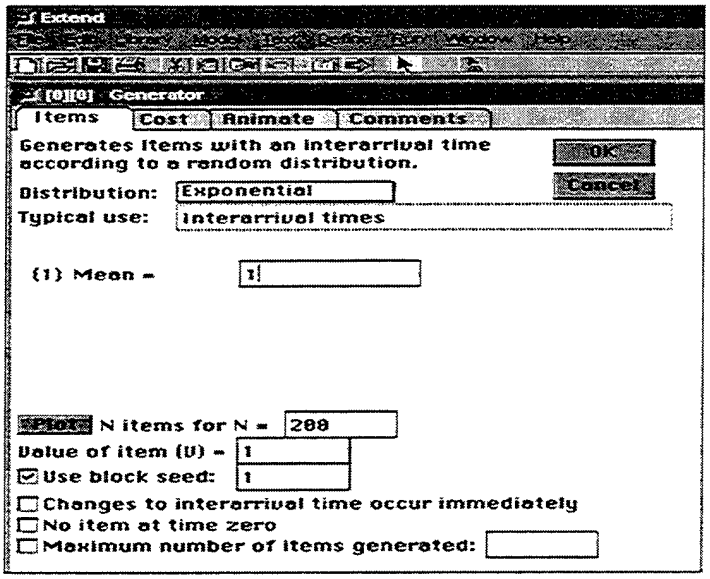


Figure 14. Generator Dialog Box

The "Set Attribute" block sets the specific attribute of items passing through the block. A "Get Attribute" block reads these attributes as the objects pass through the model, facilitating routing of the objects. Up to five attribute names and values may be assigned to an item with this block. The attributes may add to or replace existing item attributes. The amount of network traffic message size is specified with the value input connector at the dialog tab, and this is the message size that will be sent to all destinations over the network. Figure 14 shows the Set Attribute program block, and Figure 15 shows its dialog box.

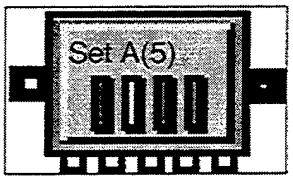


Figure 15. Set Attribute Block

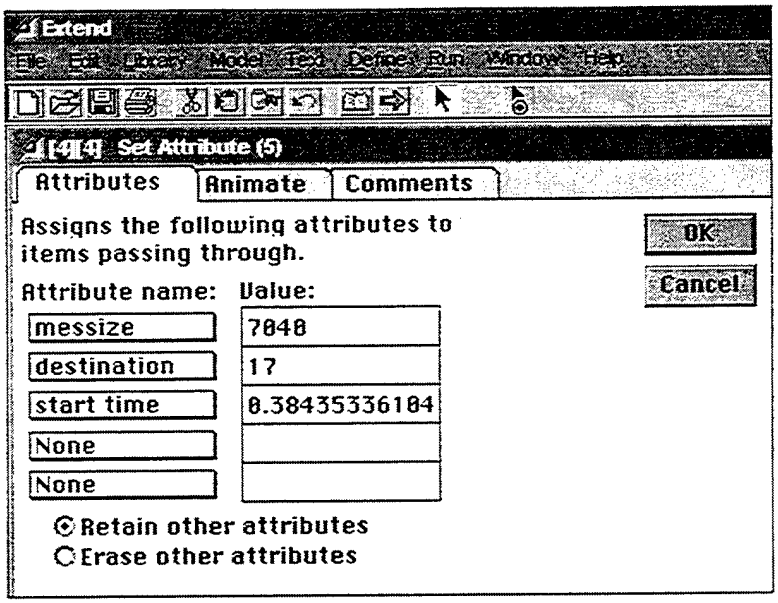


Figure 16. Set Attribute Dialog Box

The probabilities of the messages that will arrive at each destination is set by the input random number block. The input random number generates random integers or real numbers based on the selected distribution. The type of distribution can be selected from among Uniform, Beta, Binomial, Erlang, Exponential, Gamma, Geometric, HyperExponential, LogLogistic, LogNormal, Negative Binomial, Normal, Pearson type, Poisson, Triangular, Weibull, and Empirical. [Diamond, 1997]

In our network design the type of distribution used is the "Empirical table". All message's destinations are appointed by its origin nodes. As mentioned previously, there are a total of 24 origin nodes and 24 destinations in the Indonesian Eastern Fleet WAN design that consist of the Surabaya main Naval base LAN = 5 nodes, the Indonesian Eastern Fleet headquarters LAN = 7 nodes, the Juanda Naval Air base LAN = 2 nodes, the Ujung Pandang main Naval base LAN = 4 nodes, the Bitung main Naval base LAN = 3 nodes, and the Jayapura main Naval base LAN = 3 nodes. Each node sends the

messages to all 23 destinations (not including itself) with a probability = 1 : (24 – 1) = 1 : 23 = 0.043478.

Figure 16 shows the Input Random Number program block, and Figure 17 shows its dialog tabs. The values of our message destinations are entered in the first column of the dialog tabs, and the probability (=0.043478) of that value is entered in the second column. The value column contains the various values that will be output. Probability describes the chance that value will occur. The probability only needs to have the proper values relative to each other, since Extend scales them automatically.

Figure 17. Input Random Number Block

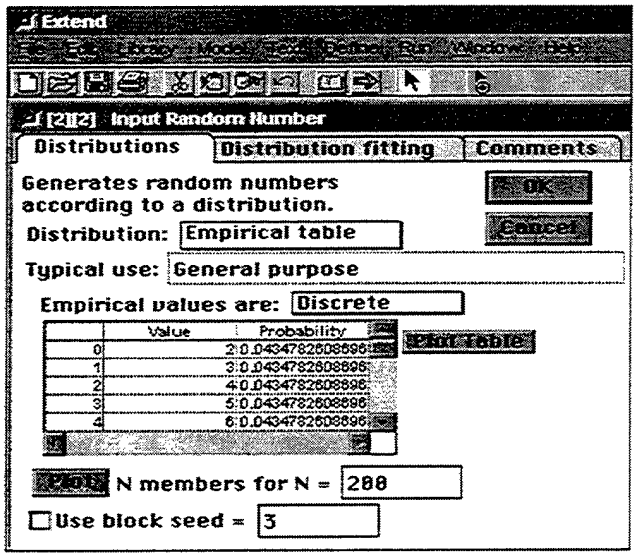


Figure 18. Input Random Number Dialog Box

## 2. Ethernet Bus

The messages are sent to the network via the Ethernet bus. Due to the 100 Mbps bandwidth (using Cat-5 UTP cable) the messages are delayed in the local area network

(LAN), represented by the activity delay program block. Each node senses the network and transmits only if the network is free.

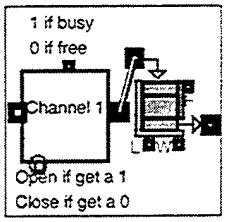


Figure 19. High Level View of the Ethernet Bus Hierarchical Block

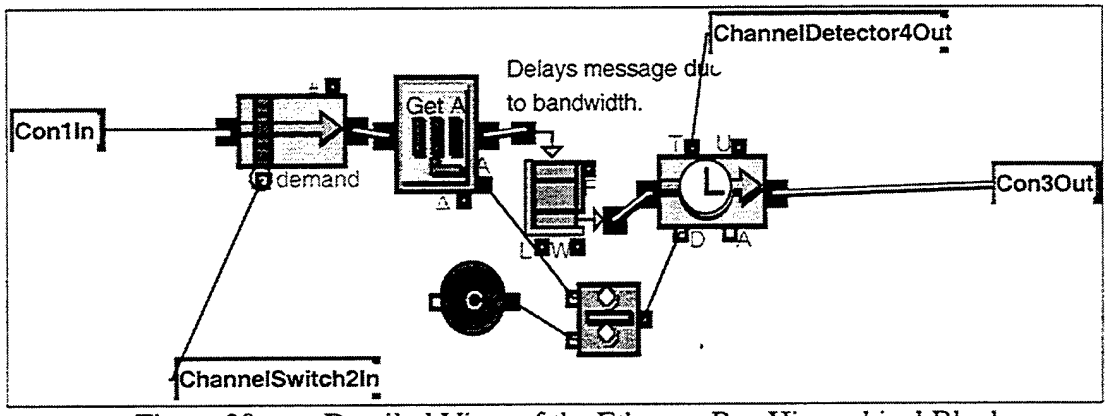


Figure 20. Detailed View of the Ethernet Bus Hierarchical Blocks

### 3. Initial Local Area Network Configuration

Message traffic generated from an origin node flows to the "first in first out" (FIFO) queue block (see figure 20), and then is sent to the Ethernet Bus in each channel where there is a sensor and detector to implement the channel access protocol of Carrier Sense Multiple Access with Collision Detection (CSMA/CD).

In the Ethernet bus (see figure 18 and 19) the messages pass through the activity service block. The *"Activity Service"* block acts as a gate. It passes an item only when the demand connector is connected and certain conditions exist at the demand input. This block serves as a conditional wait. It accumulates demand based on the values at the demand connector. When the demand input is 1 (greater than > 0.5) or when an item is pulled in at demand, the item input connector allows the items through

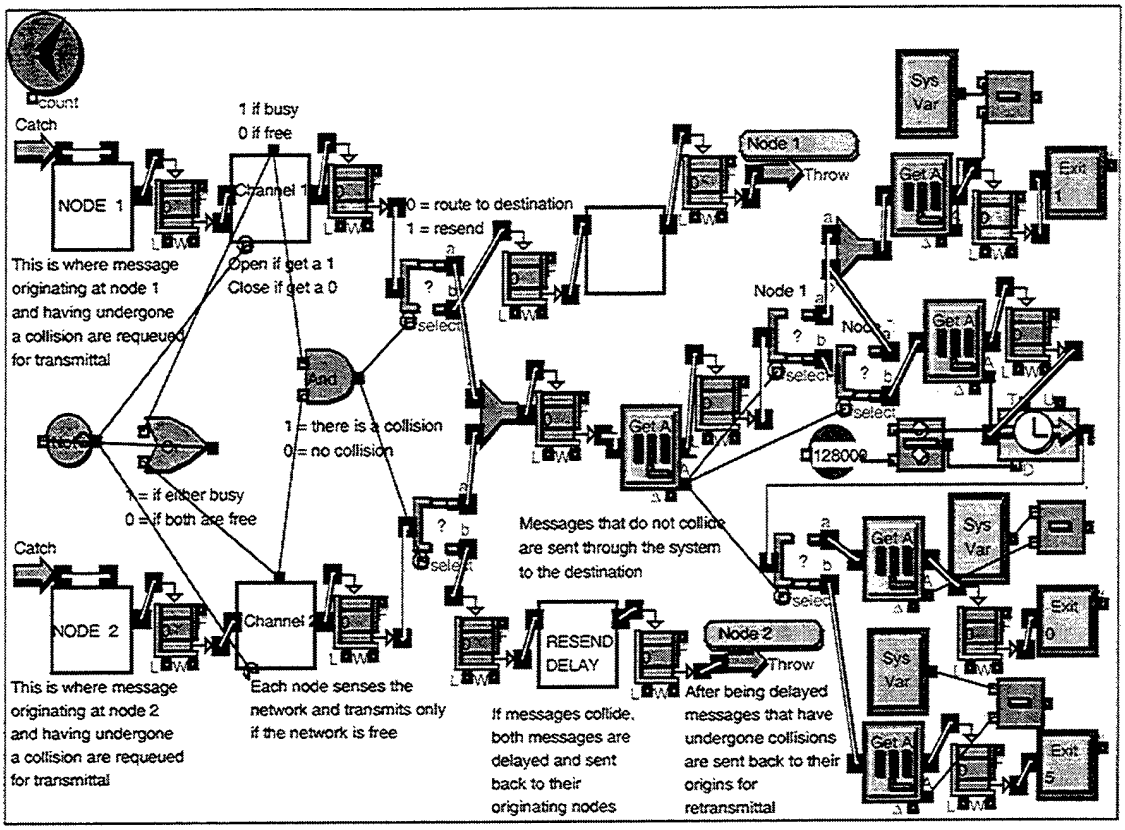


Figure 21. Initial Local Area Network Configuration

this block. If this is 0, the items will not be allowed through this block.

After passing through the activity service block, the message will come to the "*Get Attribute*" block. It displays attributes on items, then passes the items through. The attribute value is shown in the dialog and output at the A connector. As items are passed through the block, the block can either read or remove an attribute, and that attribute can be specified as the first attribute in the list or a named attribute. The name of the attribute to read should correspond to one of the names set in the Set Attribute block.

Whenever the Get Attribute reads the attribute *"message size"*, the items in the Ethernet Bus continue flowing via the FIFO queue to the Activity delay. In the Activity Delay the message is delayed due to the bandwidth 100Mbps. If no collisions occur,

messages are sent to the combine block and continue to flow to the destination in the wide area network via the Cisco 1003 ISDN router. The CSMA/CD protocol is invoked to control all the different types of message transmissions.

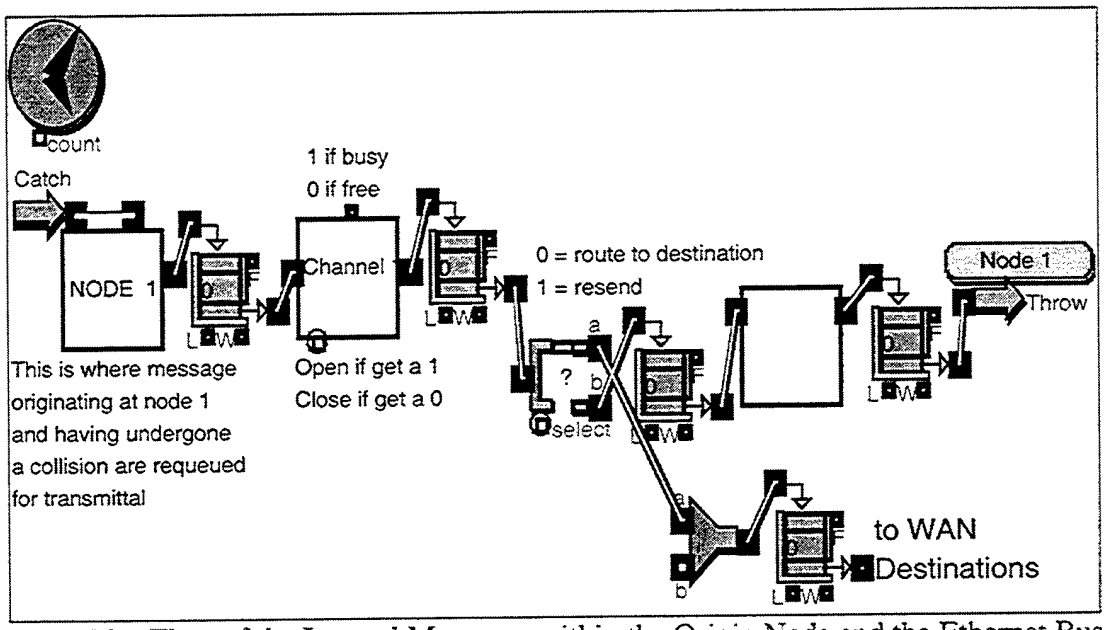


Figure 22. Flow of the Internal Messages within the Origin Node and the Ethernet Bus.

If there is a collision, messages are delayed and messages that have undergone collisions are sent back by the throw block to their origins for retransmittal. Figure 21 illustrates flow of the internal messages within the original node and the Ethernet bus in a local area network.

Internal messages must be sensed and detected. Both the sensor and detector work the bandwidth delay in the Ethernet Bus hierarchical block. If a message is being delayed, the sensor and detector will transmit the information.

The *"Select Discrete Event Output"* selects the input item to be output at one of two output connectors based on a decision. The item at the input is passed through the selected output. The dialog has options for changing the outputs after a given number of items have passed and selecting based on the select connector. The outputs are selected

based on the choices in the dialog. In this network design we define that if it is 0, messages will route to destinations in the network. If it is 1, a collision has occurred and the message has to be retransmitted.

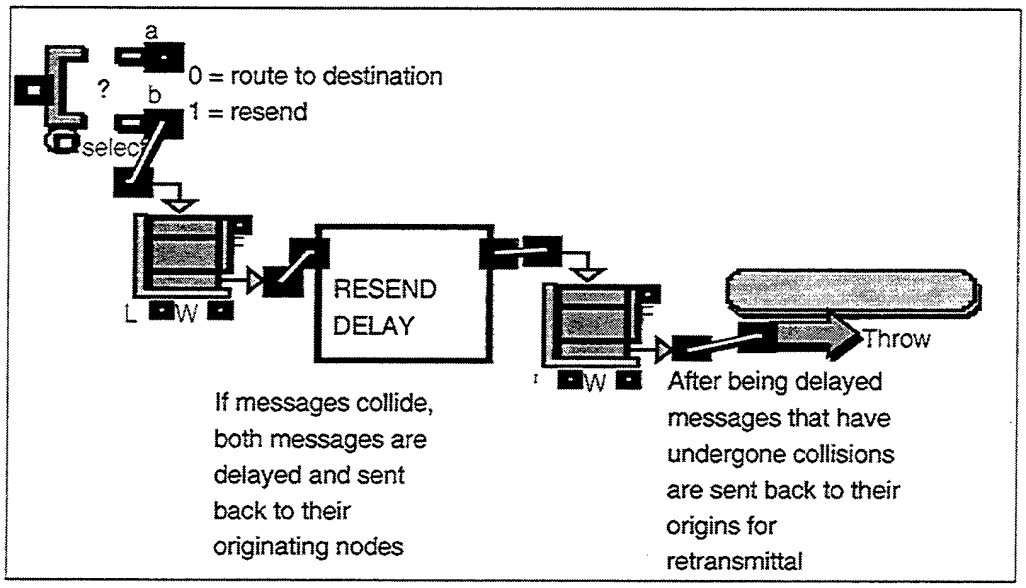


Figure 23. High Level Resend Delay Hierarchical Block

When messages collide, both messages are delayed and sent back to their originating nodes. A retransmitted message is resent to the identified catch block through the Resend Delay hierarchical block. Figure 31 shows the high level view of Resend Delay hierarchical block, and Figure 32 shows the detailed view of Resend Delay hierarchical block.

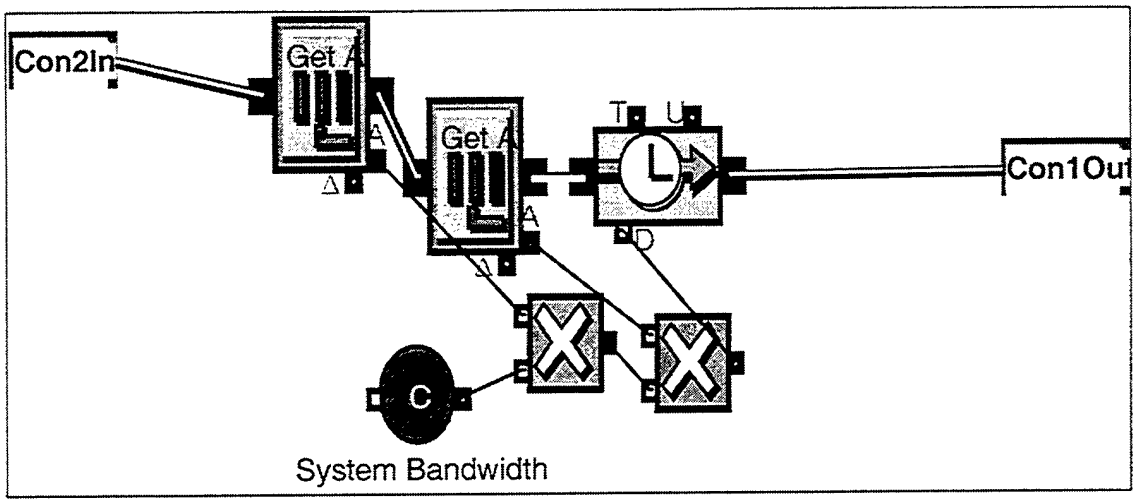


Figure 24. Detailed View of Resend Delay Hierarchical Block

### 4. Interconnecting the Indonesian Eastern Fleet Wide Area Networks

Each LAN can be consists of two nodes, three nodes, four, and so forth. Once LANs are created, they can be interconnected to construct WAN communication architectures of virtually any size. Next Figures show the Extend-4 simulation model workspace of the Indonesian Eastern Fleet WAN design that consists of:

- Figure 25 shows high level view of the Indonesian Eastern Fleet WAN design
- Figure 26 shows detailed view of Surabaya main Naval base LAN
- Figure 27 shows detailed view of the Indonesian Eastern Fleet headquarters LAN
- Figure 28 shows detailed view of Juanda Naval air base LAN
- Figure 29 shows detailed view of Ujung Pandang main Naval base LAN
- Figure 30 shows detailed view of Bitung main Naval base LAN
- Figure 31 shows detailed view of Jayapura main Naval base LAN

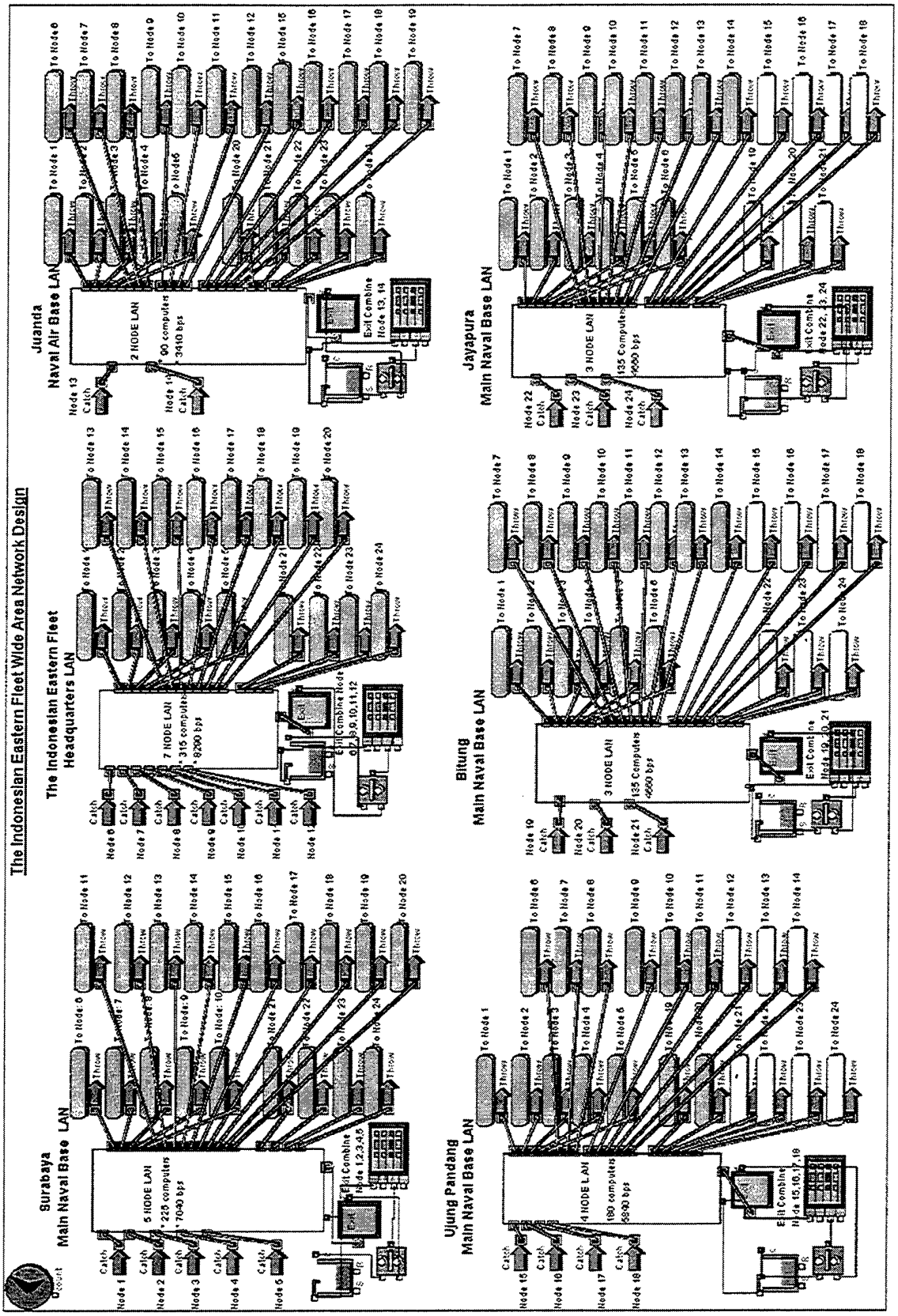


Figure 25. The Indonesian Eastern Fleet WAN design

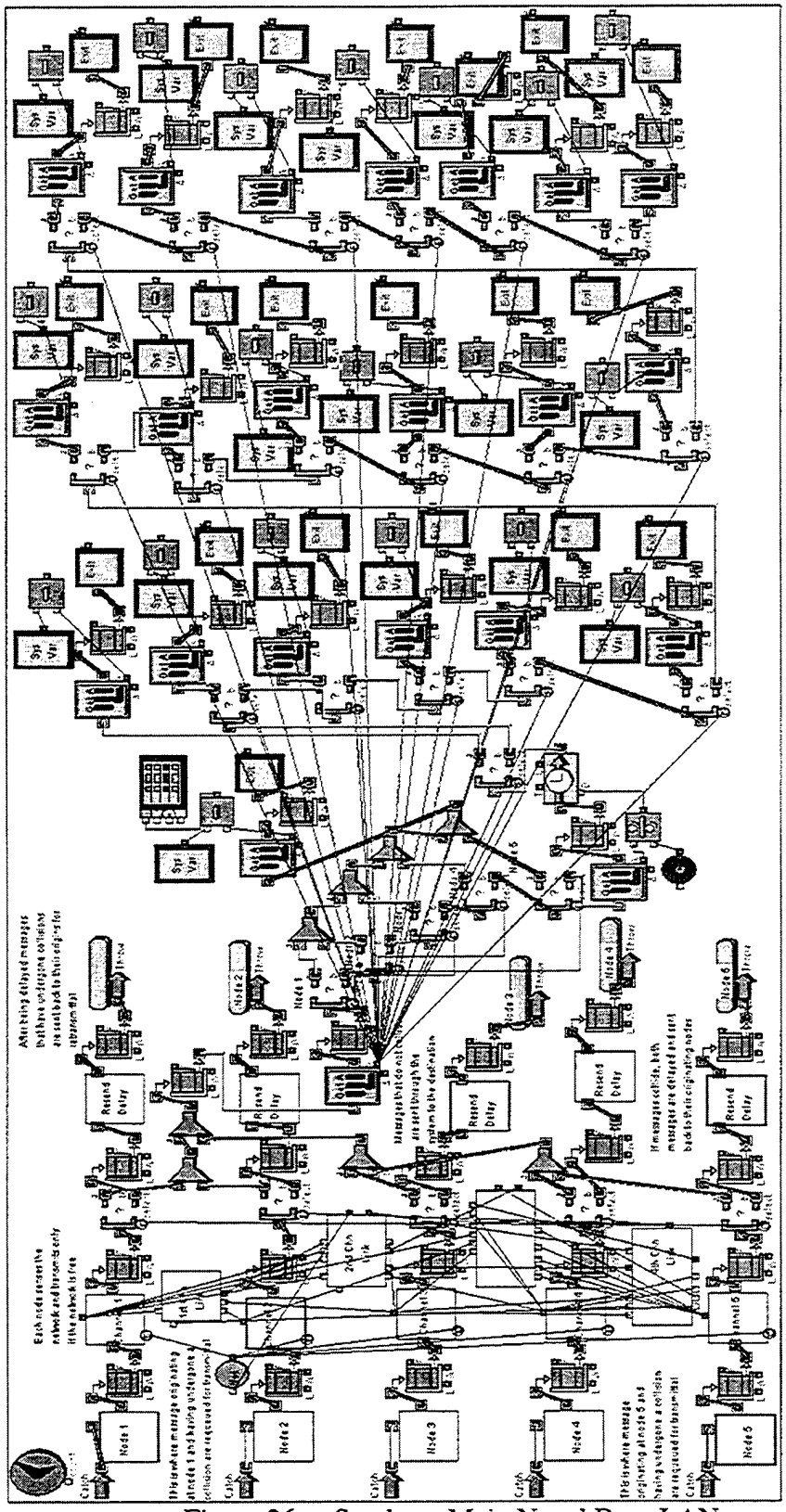

Figure 26. Surabaya Main Naval Base LAN

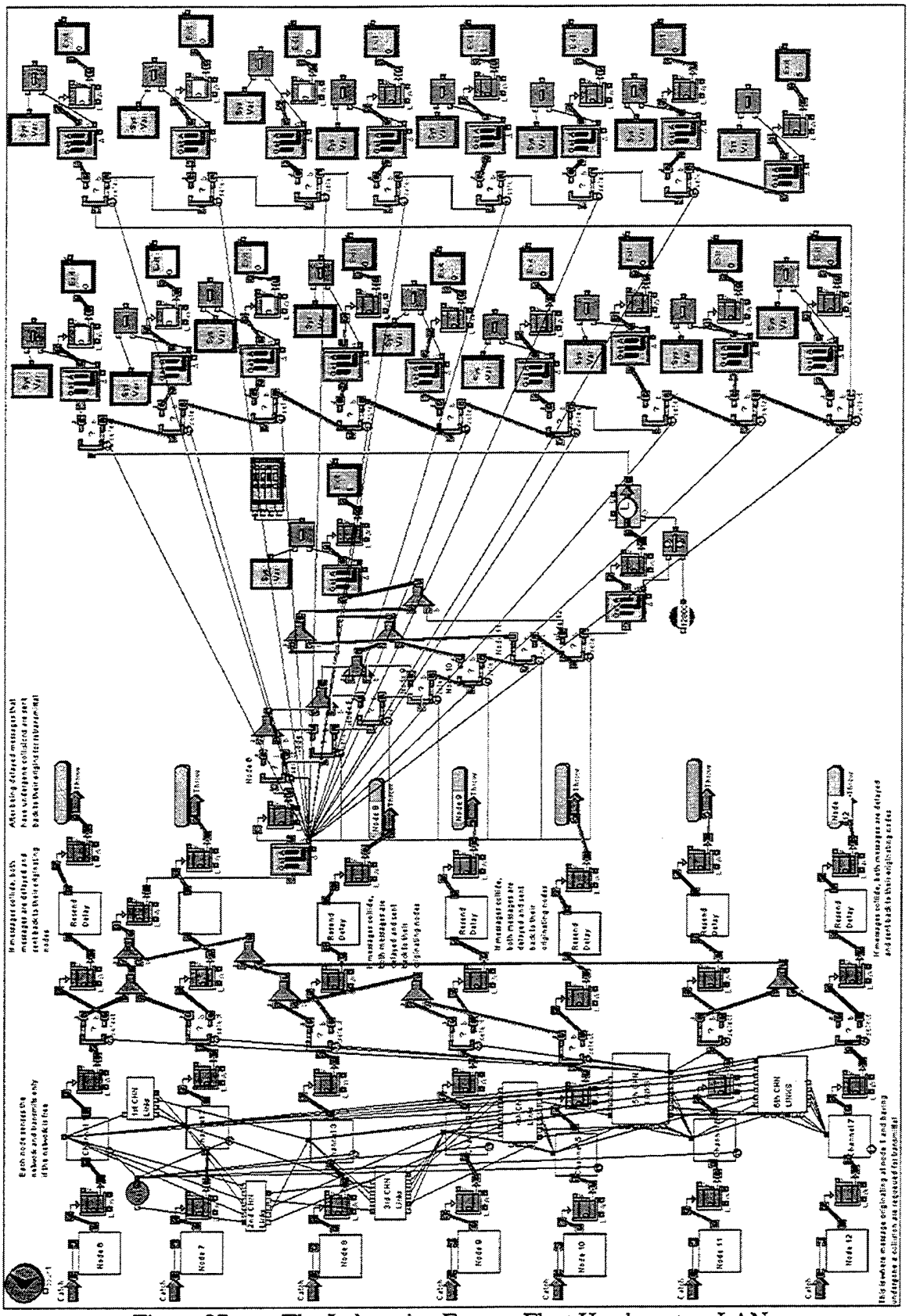

Figure 27. The Indonesian Eastern Fleet Headquarters LAN

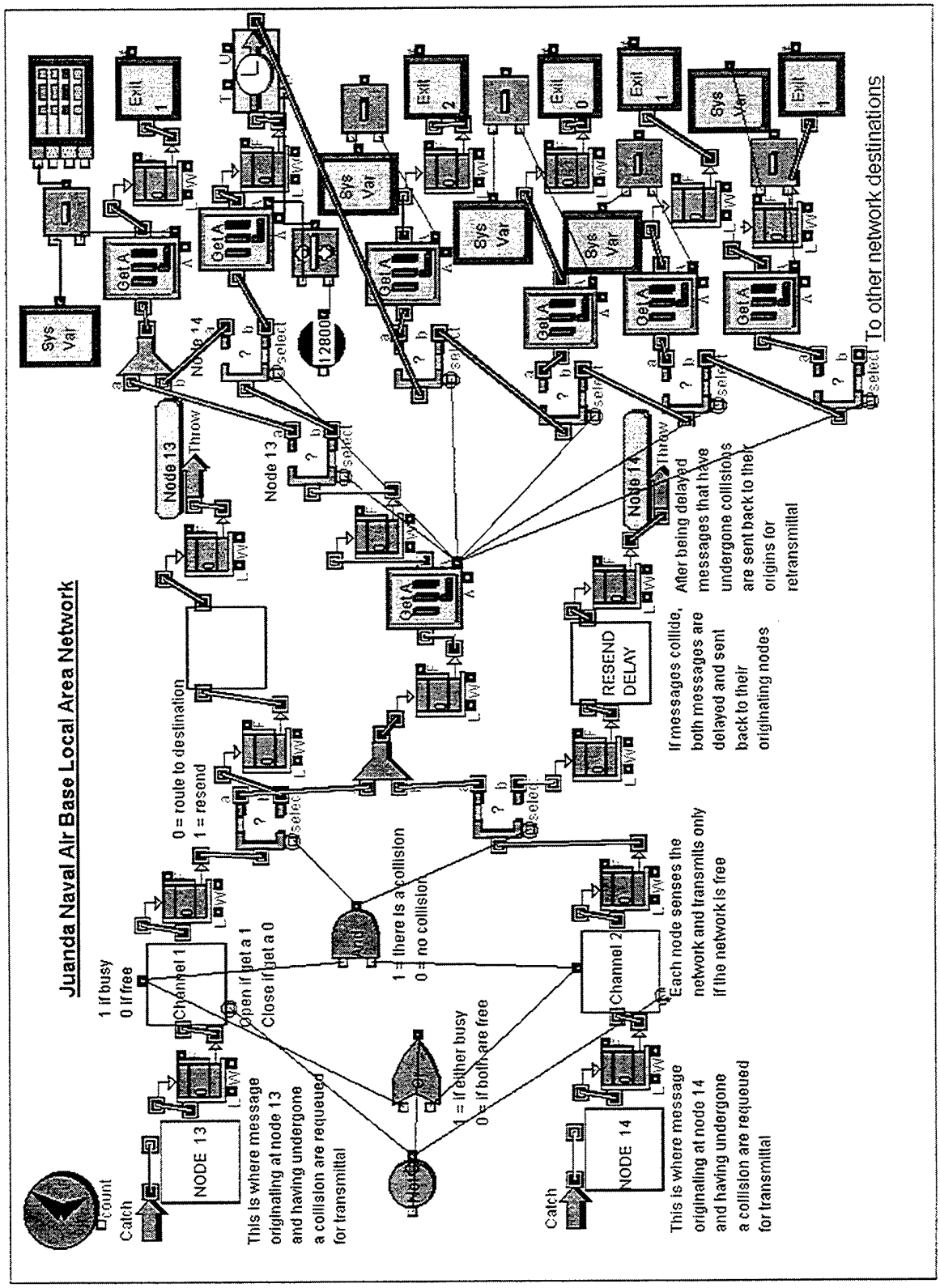


Figure 28. Juanda Naval Air Base LAN

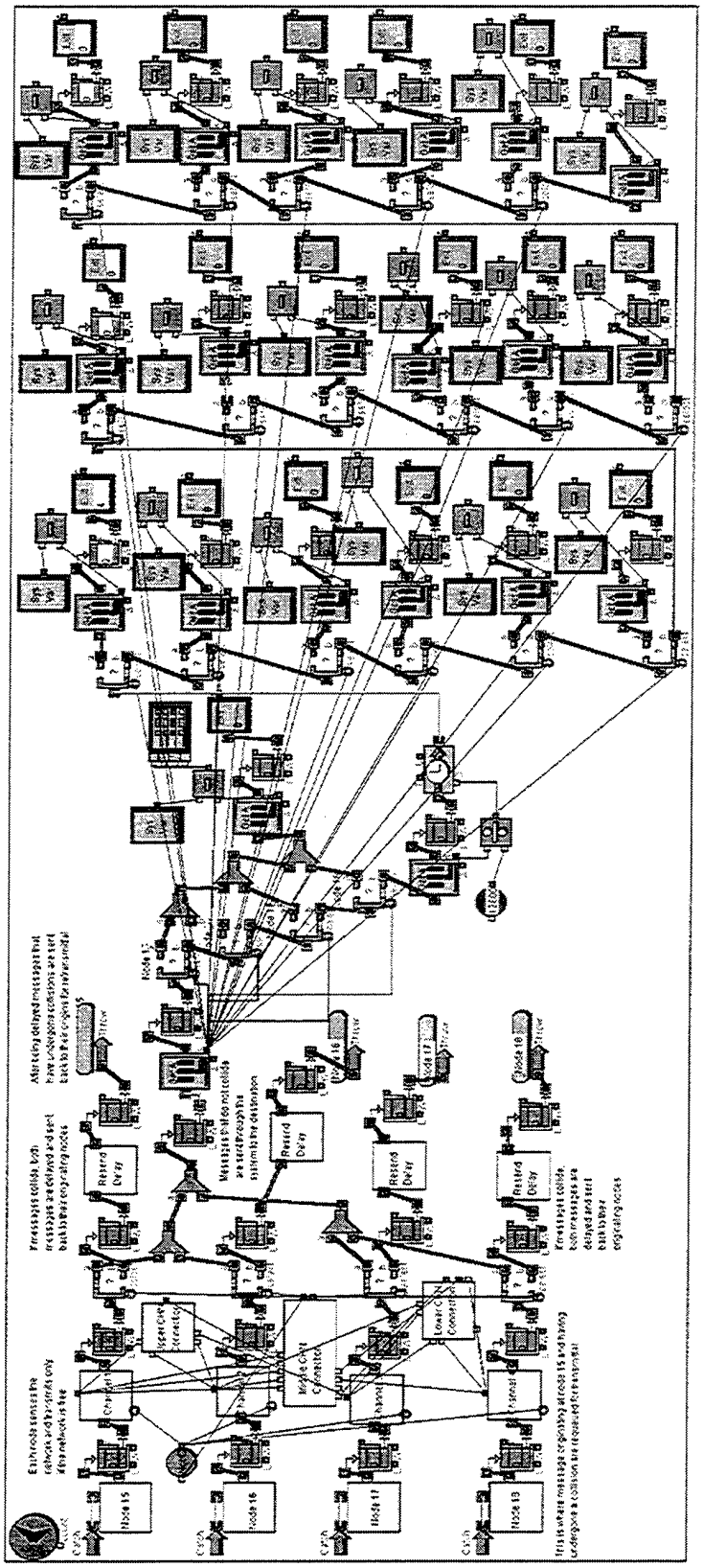

Figure 29. Ujung Pandang Main Naval Base LAN

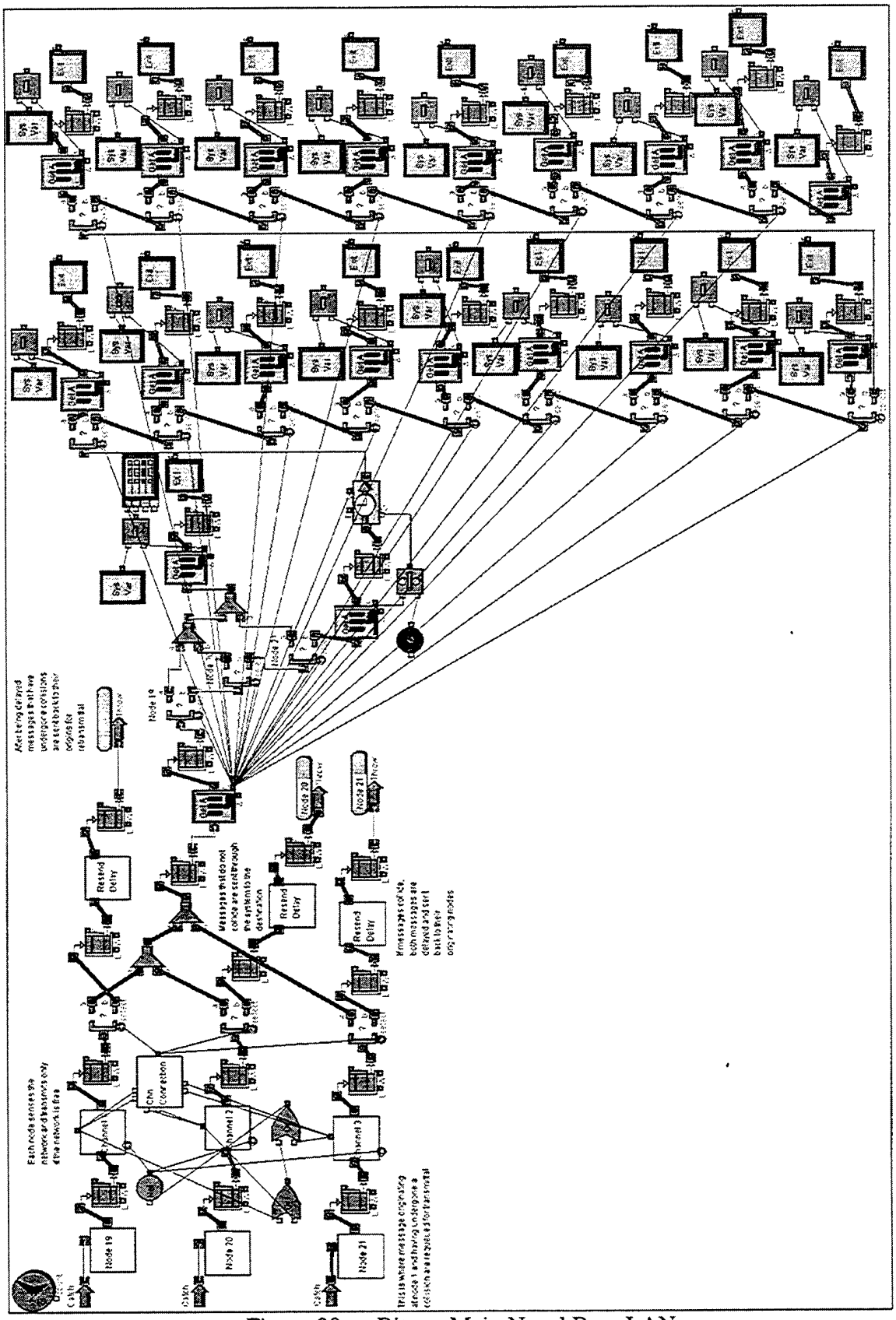

Figure 30. Bitung Main Naval Base LAN

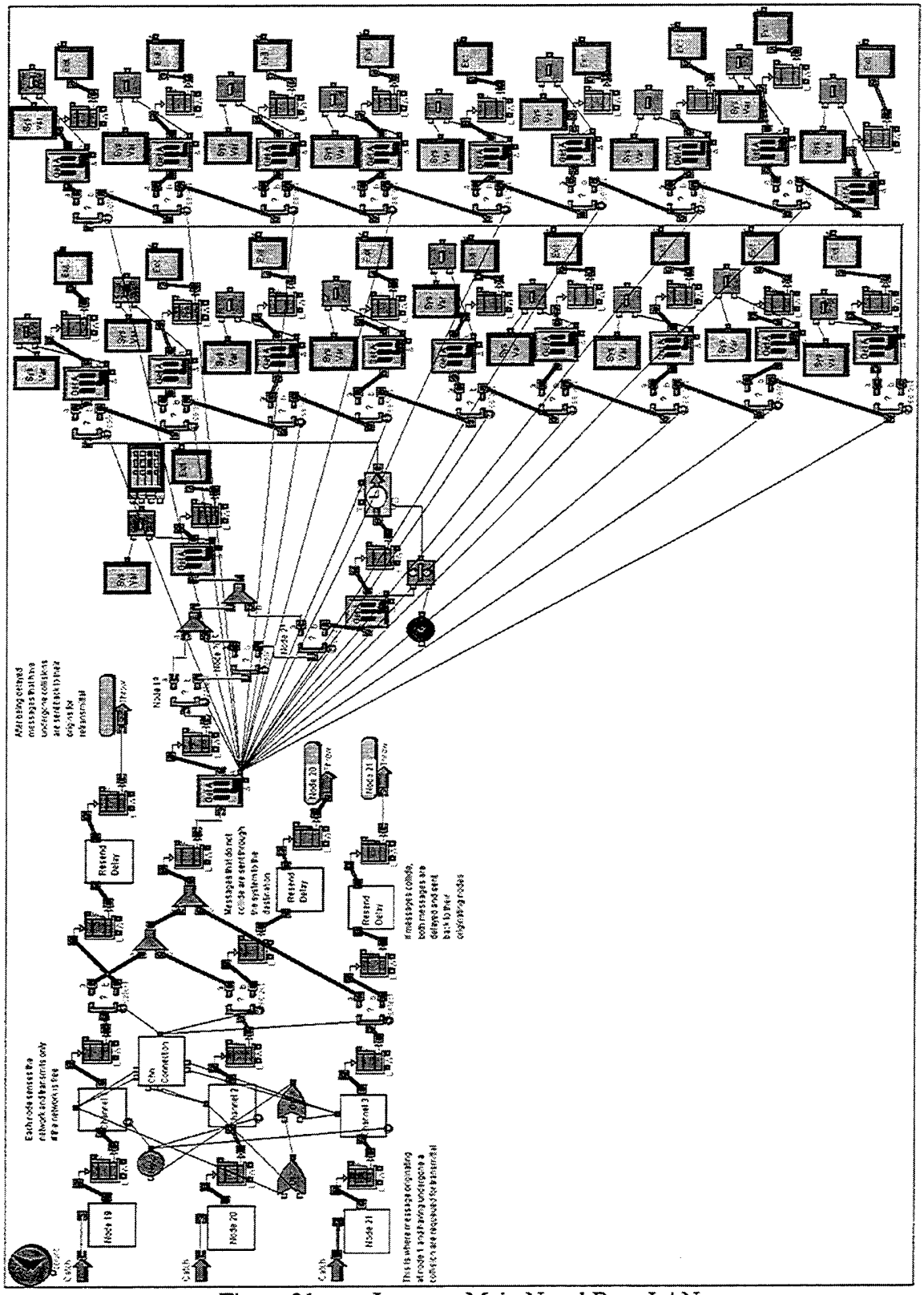

Figure 31. Jayapura Main Naval Base LAN

## C. TESTING AND SIMULATION RUN

This section provides results of testing and simulation runs of our wide area network design. A simulation was run using the initial network depicted in Figure 24. All simulations run for a specified time. Extend-4 determines the duration of a simulation based on the values entered in the Simulation Setup dialog (see Figure 31); the duration is the period from the start time to the end time.

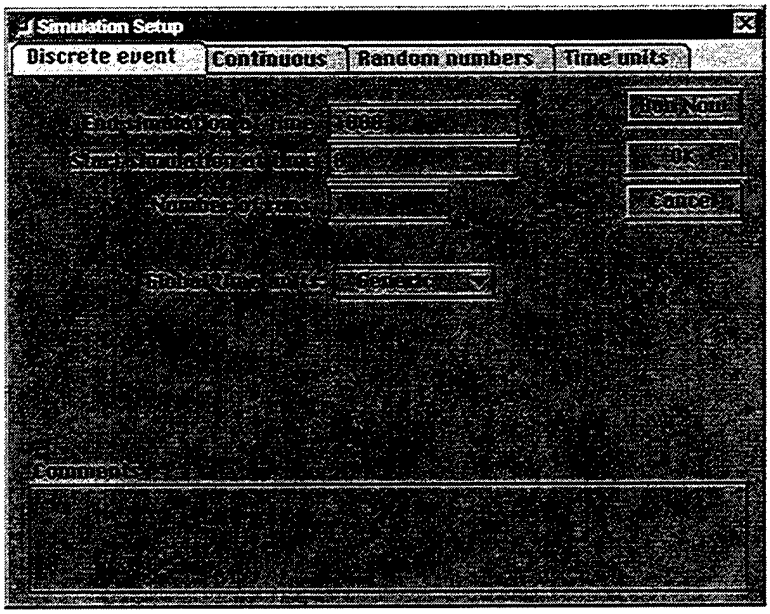


Figure 32. Simulation Set Up Dialog

A Run was executed for 100 seconds simulation time which constituted about 660 seconds real time, and 350 seconds simulation time which constituted about 2040 seconds real time. We executed two simulation runs in each simulation setup. The first run of simulation we used a frequency distribution of 1 second that we set in the Generator program block at each origin node. At the second run we use frequency distribution 0.5 second. All communications that started and ended within an origin nodes and the Ethernet bus showed a delay equal to the message size divided by the

bandwidth. The "Solid Blue" line indicates the bandwidth delay and the "Gray Pat Green" line indicates the average bandwidth delay. The charts depict the delay according to time for each LANs. The vertical axis depicts the delay incurred for each message. The horizontal axis displays the simulation time.

The charts on the figures 32 through figure 57 show some significant spikes in time delay during the messages flows in the network using WAN connection service ISDN 128Kbps and using T1 Line 1.544 Mbps.

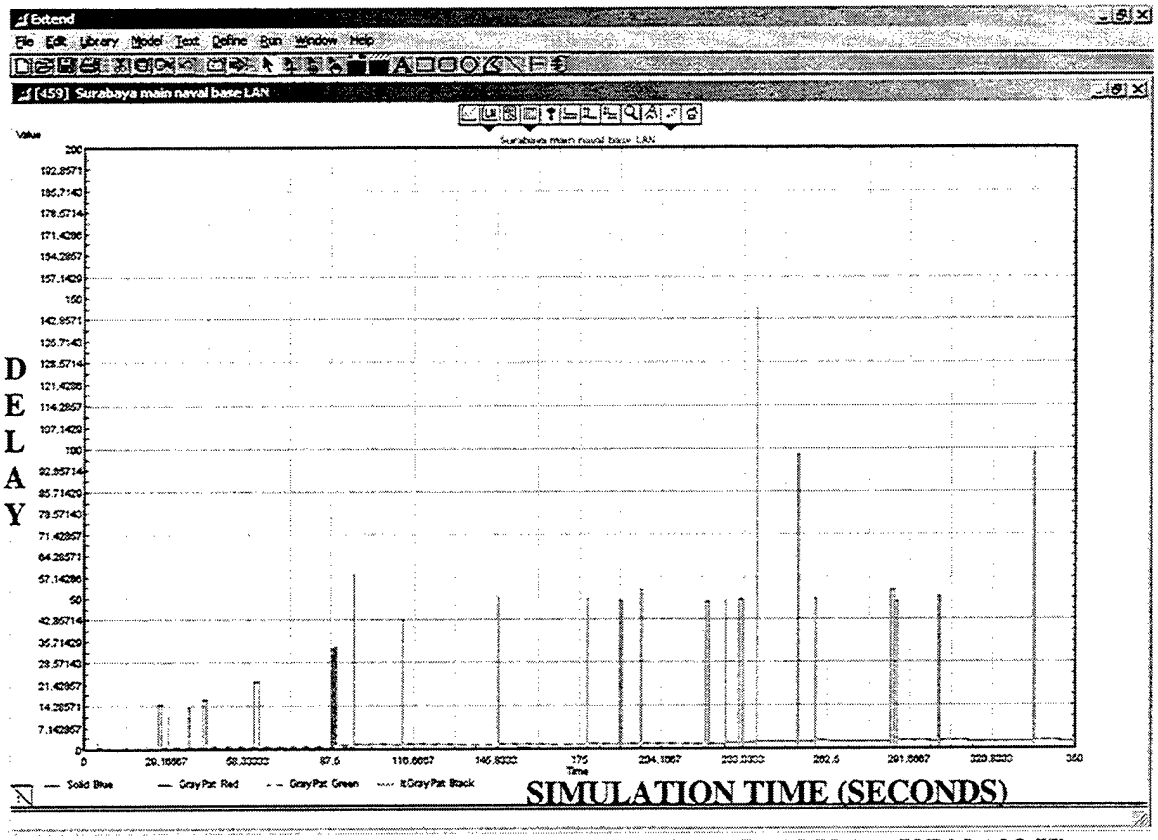


Figure 33. Delay Within Surabaya Main Naval Base LAN Using ISDN 128 Kbps

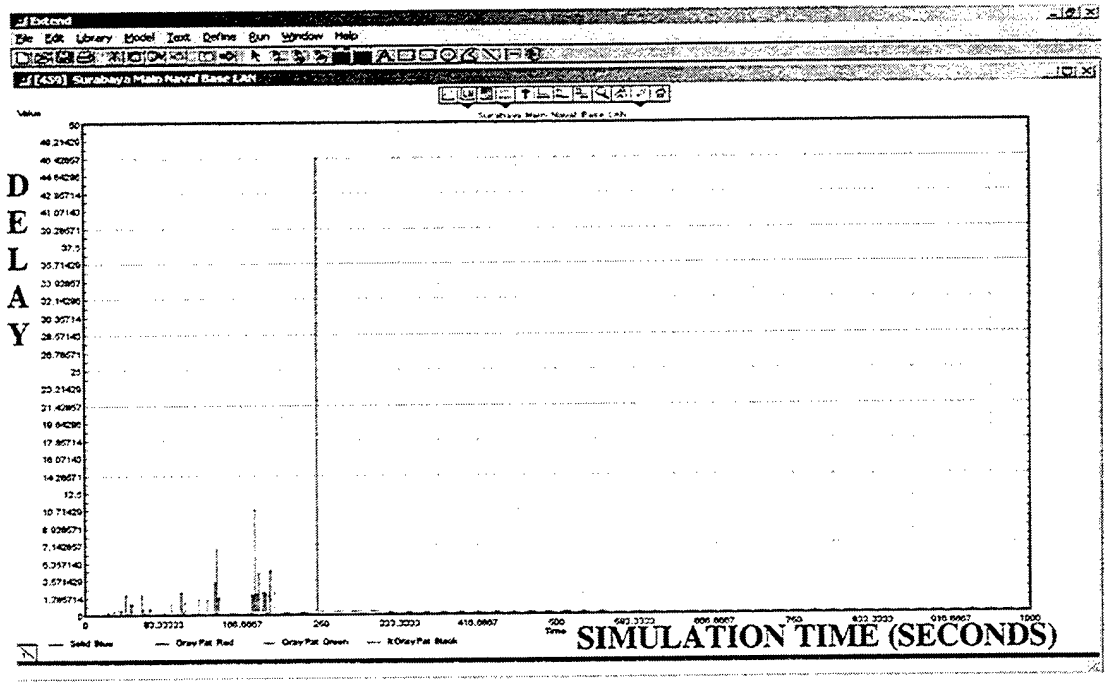


Figure 34. Delay Within Surabaya Main Naval Base LAN Using T1 Line 1.544 Mbps

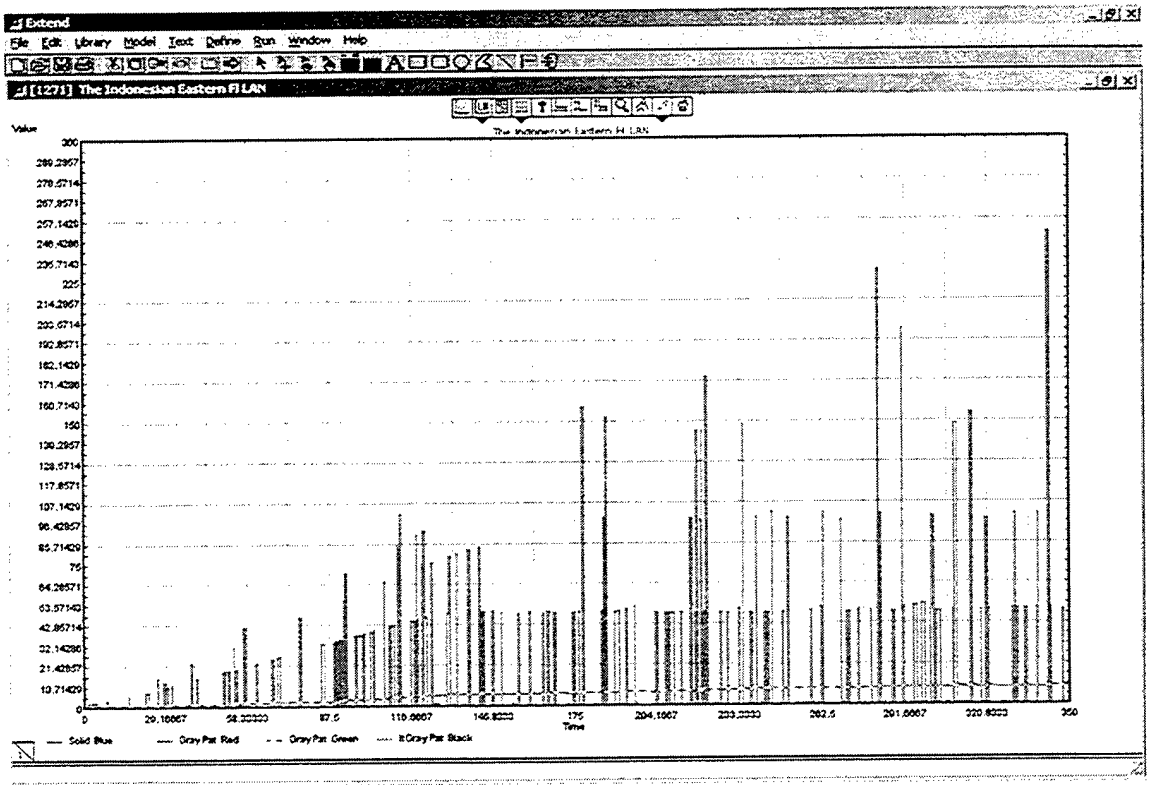


Figure 35. Delay Within the Indonesian Eastern Fleet Headquarters LAN Using ISDN 128 Kbps

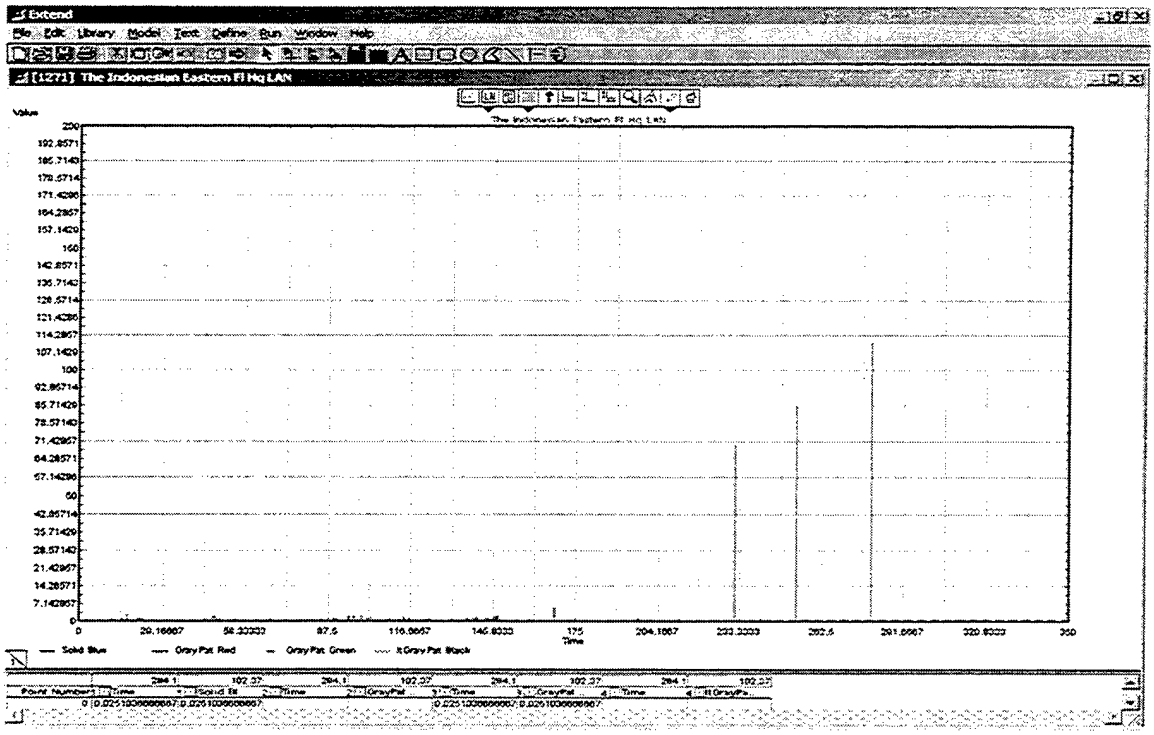


Figure 36. Delay Within the Indonesian Eastern Fleet Headquarters LAN Using T1 Line 1.544 Mbps

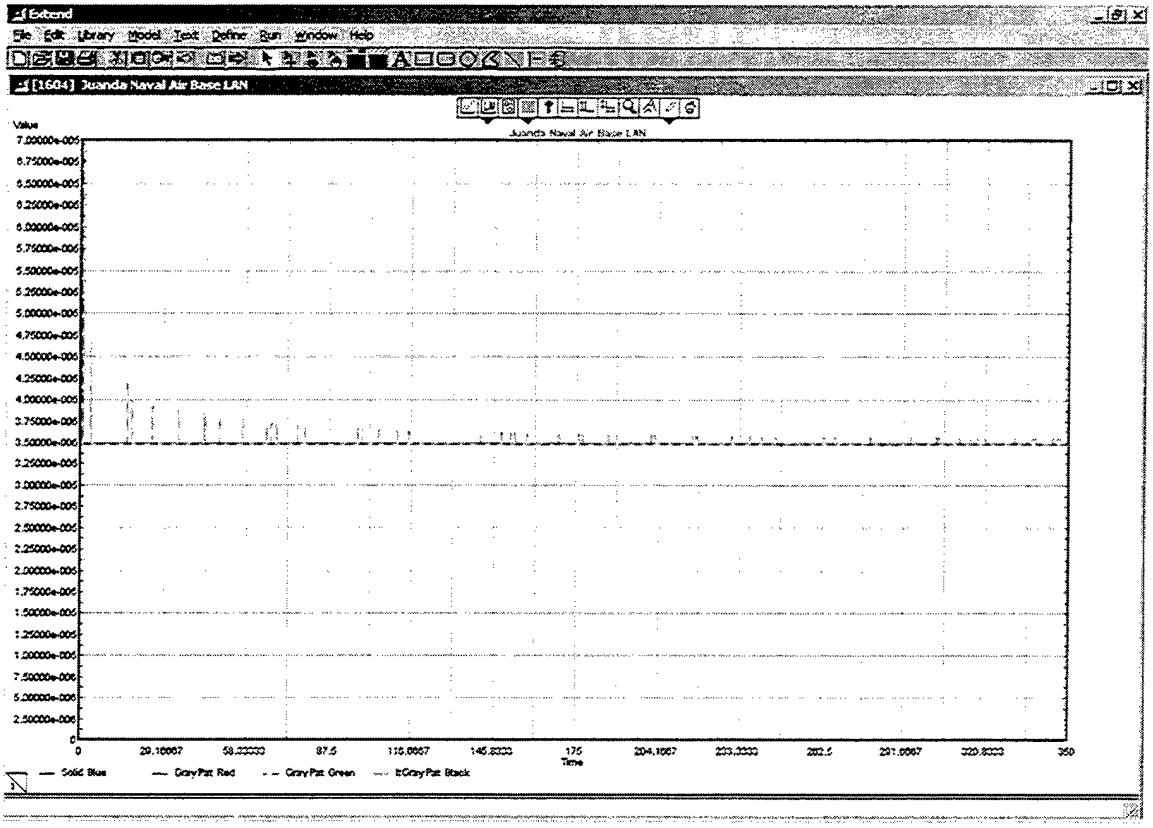


Figure 37. Delay Within Juanda Naval Air Base LAN Using ISDN 128 Kbps

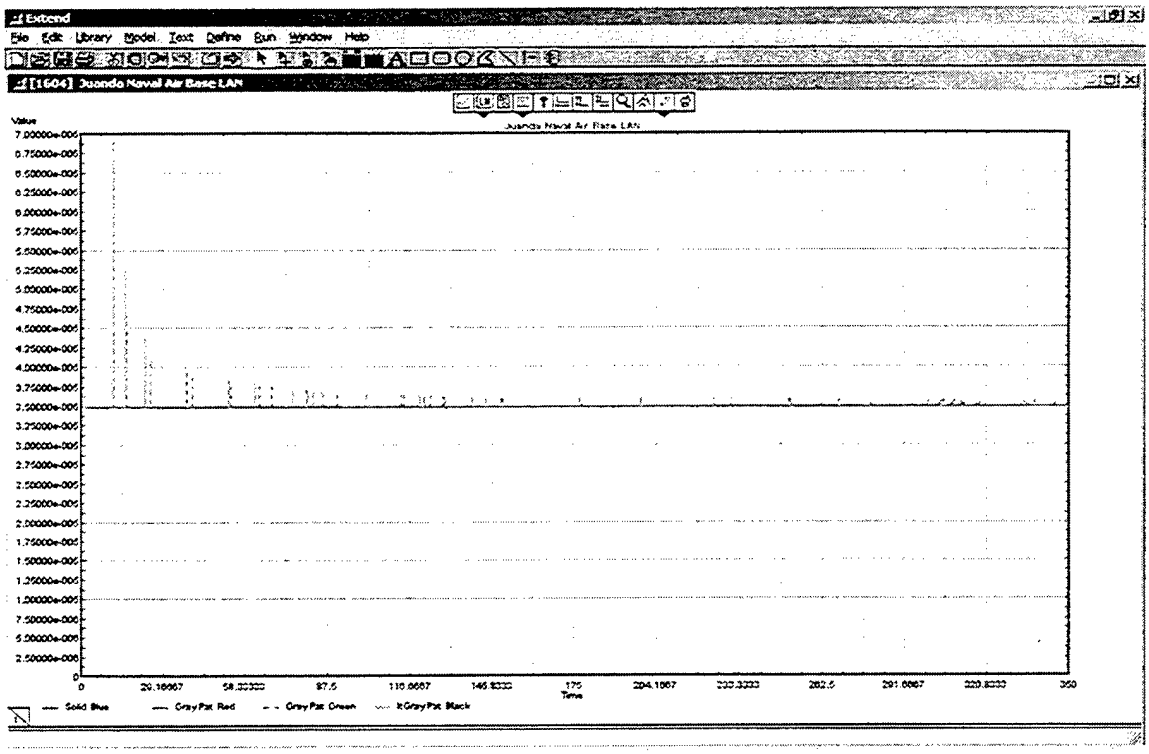


Figure 38. Delay Within Juanda Naval Air Base LAN Using T1 Line 1.544 Mbps

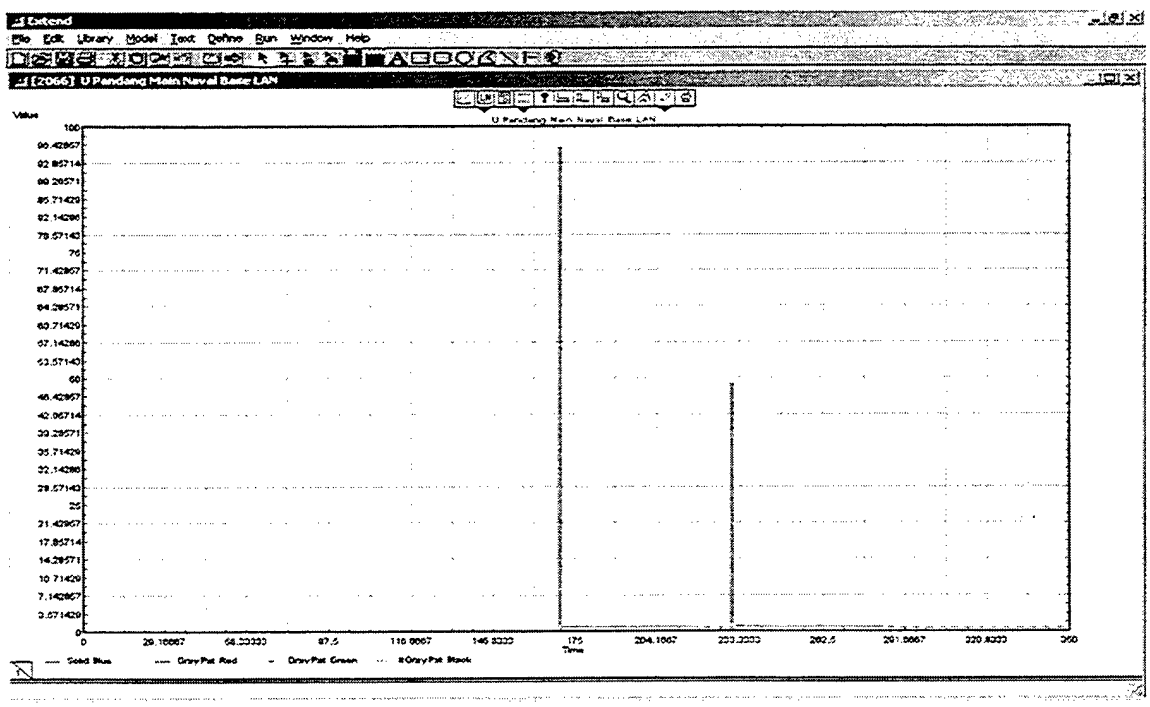


Figure 39. Delay Within Ujung Pandang Main Naval Base LAN Using ISDN 128 Kbps

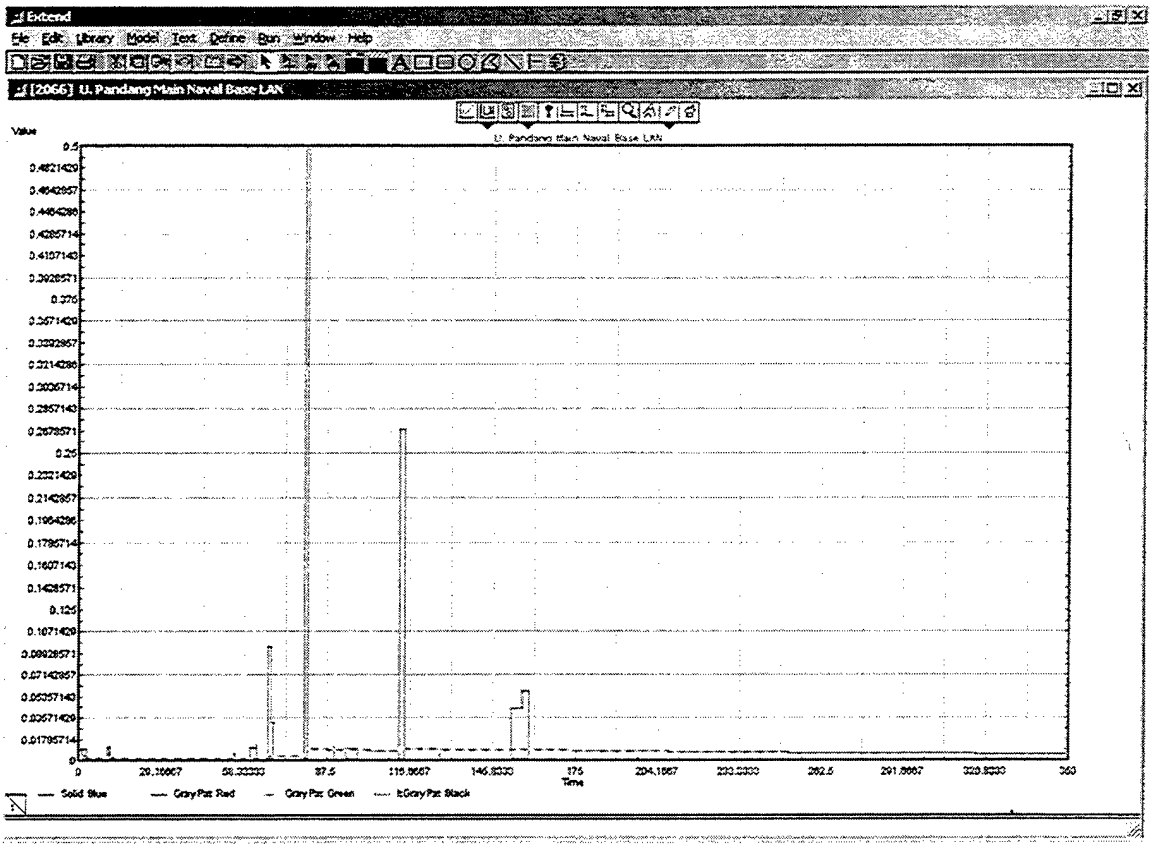


Figure 40. Delay Within U. Pandang Main Naval Base LAN Using T1 Line 1.5 Mbps

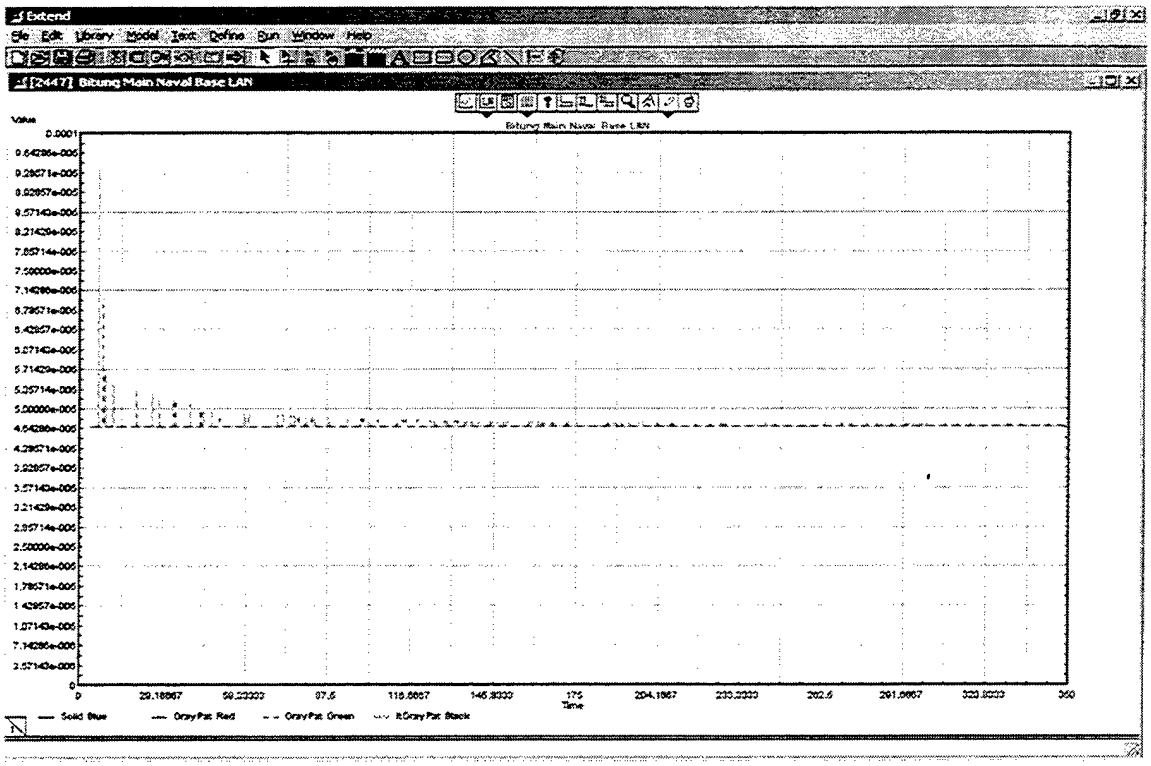


Figure 41 Delay Within Bitung Main Naval Base LAN Using ISDN 128 Kbps

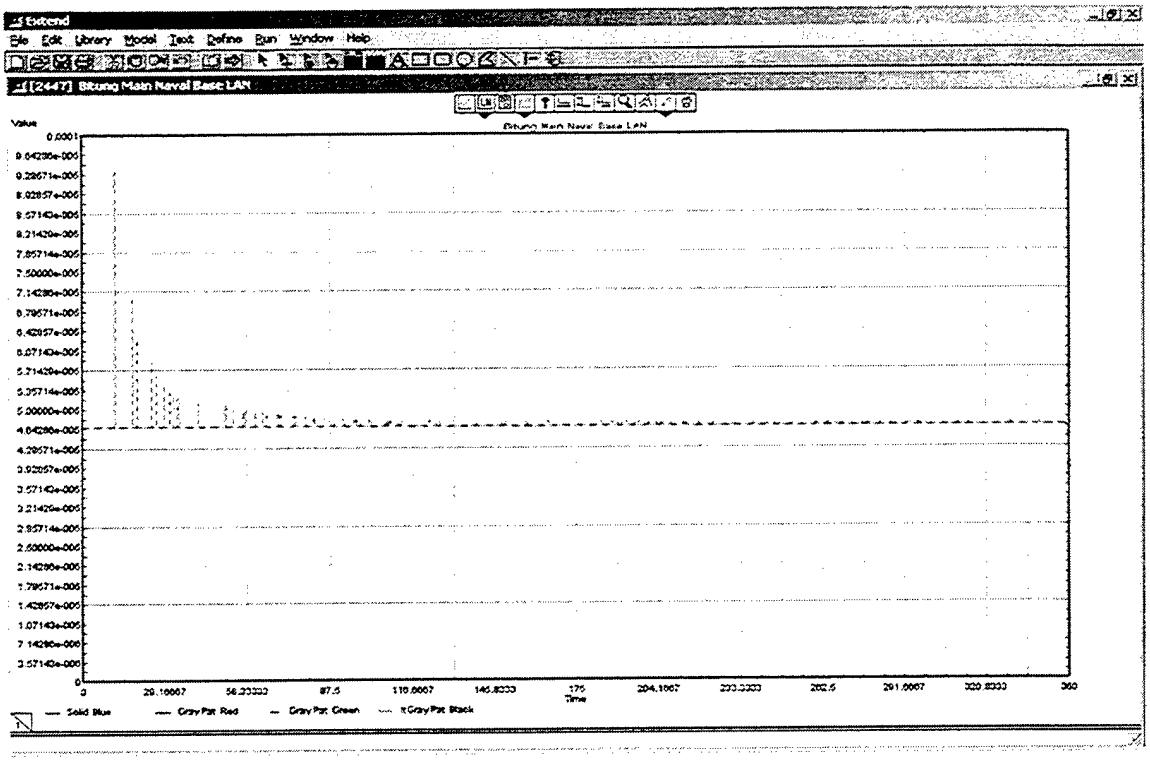


Figure 42. Delay Within Bitung Main Naval Base LAN Using T1 Line 1.544 Mbps

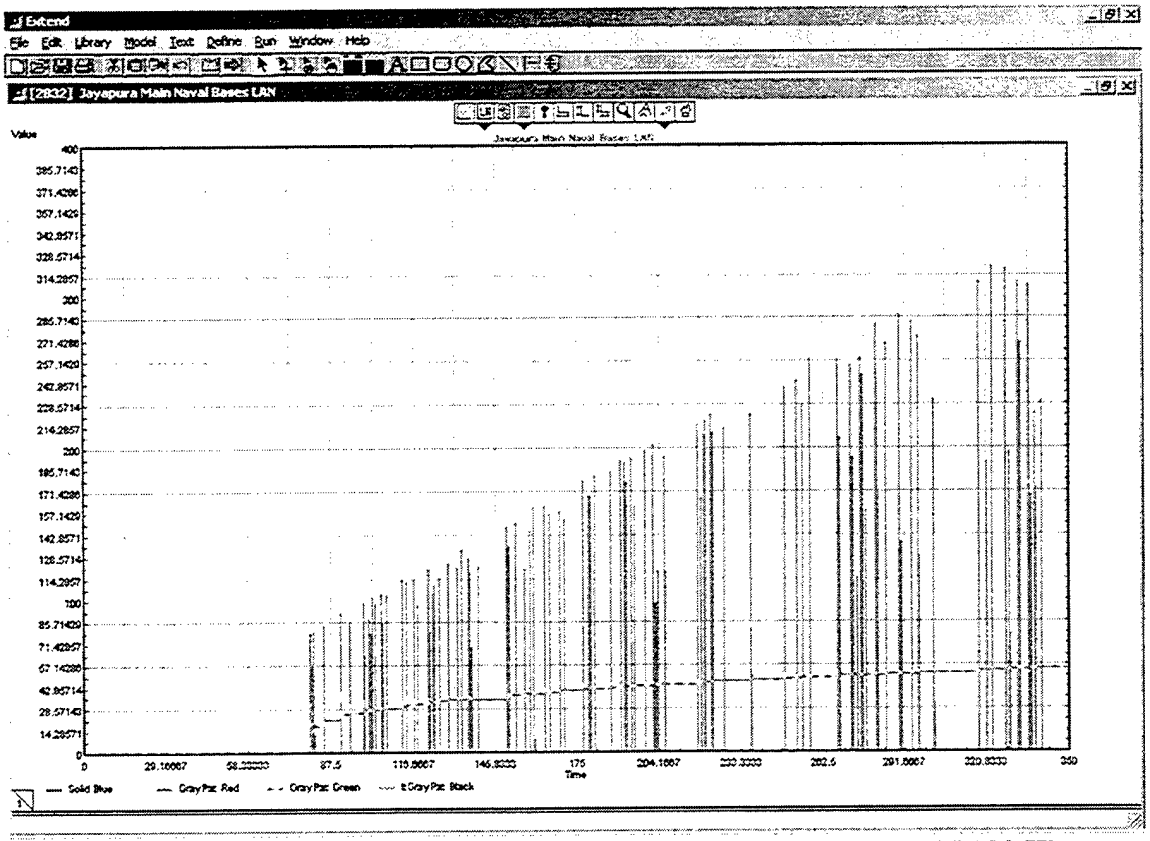


Figure 43. Delay Within Jayapura Main Naval Base LAN Using ISDN 128 Kbps

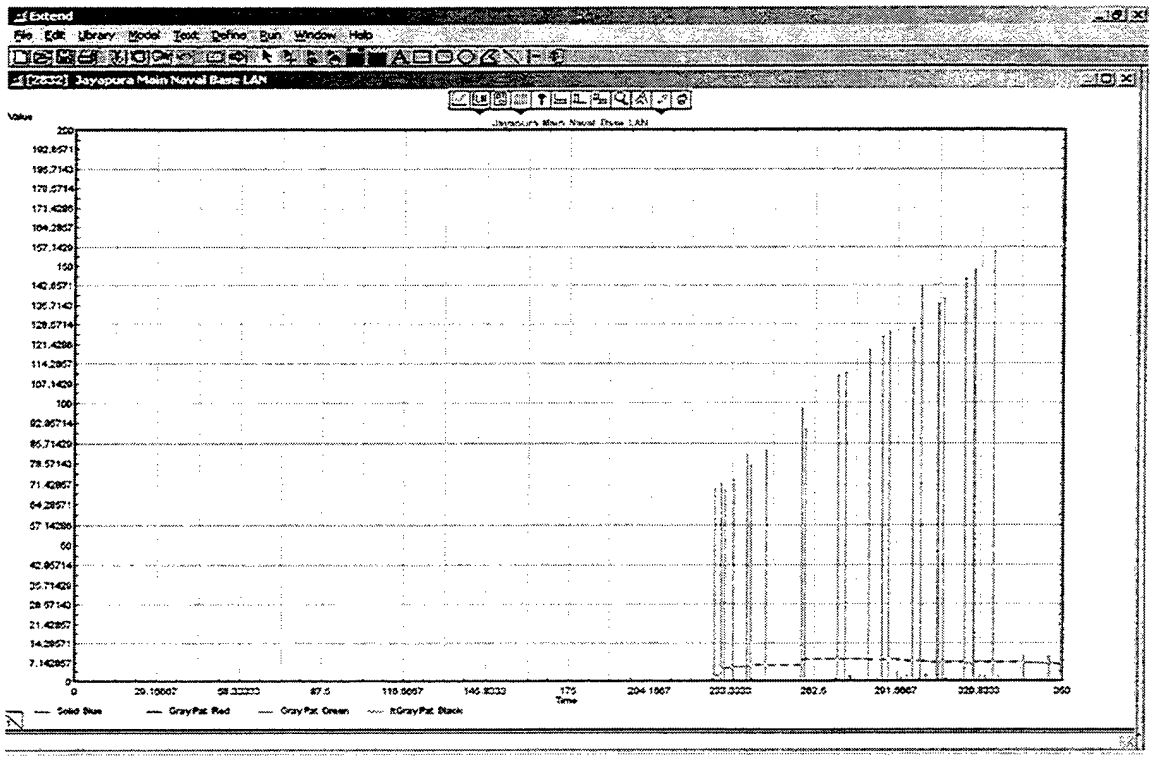


Figure 44. Delay Within Jayapura Main Naval Base LAN Using T1 Line 1.544 Mbps

A total of four simulation runs were conducted. The data is summarized in the plots and charts provided in Appendix A; the charts contain detailed message traffic reports for randomly selected nodes. Run 0 was programmed for duration of 350 simulation seconds using a frequency distribution of 1 second, which took 2040 seconds real time to accomplish. Run 1 was programmed for duration of 350 simulation seconds using frequency distribution 0.5 second, which took 2150 seconds real time to accomplish. Run 2 was programmed for a duration of 100 simulation hours using a frequency distribution of 1 second, which took 660 seconds real time to accomplish. Run 3 was programmed for a duration of 100 simulation seconds using a frequency distribution 0.5 second, which took 660 seconds real time to accomplish.

The final results of the simulation showed that the wide area network communication architecture which consists of six FAST ETHERNET 100 Mbps LAN

configuration had minimal delays that caused by messages collisions and the load of the network traffic. The worst case of maximum bandwidth delay (indicated by solid blue lines) along the wide area network traffic is 5 minutes. However, these maximum bandwidth delays still within requirement limitations for the flows of network traffic of the Indonesian Eastern Fleet WAN.

T1 Line 1.544 Mbps provides better results on the average bandwidth delay (indicated by the gray pat green lines). All charts showed T1Line's average bandwidth delay is smaller than ISDN's average bandwidth delay which mean the network traffic is working effectively without too much messages collisions and delays. It was occurred because the T1 line 1.544 Mbps provides 12 x faster speed and the network is working more efficiently. The result of the tests and simulation runs indicated that the Indonesian Eastern Fleet WAN design either using ISDN 128 Kbps or T1 Line 1.5 Mbps is reliable and has a good performance in its network traffic management.

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# VII. CONCLUSIONS AND RECOMMENDATIONS

An improvement in information systems will increase productivity, speed, and effectiveness of the Indonesian Eastern Fleet in accomplishing their tasks and missions. The Indonesian Eastern Fleet has to deal with many issues related to the fast improvement of the information technology systems. The existing information structure of the Indonesian Eastern Fleet must be optimized to handle fleet missions and tasks. The Indonesian Eastern Fleet network's communication system resources such as telephone, radio communications, microwave-link and satellite systems are still not linked for optimal data communication exchange to computer network systems in LANs or in an integrated WAN. Implementation of an integrated WAN using web-based technology is the best solution to utilize the existing computer communication systems in the Indonesian Eastern Fleet.

The linkage of all main naval base LANs using ISDN WAN connection service provides a reliable computer communication network that can be used by the Indonesian Eastern Fleet to support all naval units in the eastern region with great effectiveness. ISDN connection service is inexpensive compared to other WAN connection lines such as T1, T3, OC-3, OC-12, OC-48, or OC-192. However, it is already met the requirements of the Indonesian Eastern Fleet network. We can migrate easily to a T1 line 1.544 Mbps connection service in the near future if the budget allocation is available in order to achieve better network performance and speed. T1 Line 1.5 Mbps provides robust and reliable network configuration to support the main goal of the Indonesian Eastern Fleet information systems.

The Indonesian Eastern Fleet should use a standardized LANs architecture to provide a responsive and uniform network environment. We recommend Fast Ethernet 100 Mbps LANs configuration as a standardized LANs infrastructure for the Indonesian Eastern Fleet network. Fast Ethernet LANs configuration operating at 100 Mbps using CAT-5 UTP provides a reliable LAN technology that meets high demands for network bandwidth.

To obtain the best performance of our network, we need to determine the appropriate hardware and software compatibility that meets the Indonesian Eastern Fleet network's requirements and allocated budget. Inexpensive is the keyword in designing our network. However, effective local area networks (LANs) and an integrated wide area network (WAN) are required to achieve connectivity of the Indonesian Eastern Fleet Network. Web-based network management using HP OpenView should be implemented to monitor and control the operation of the network to ensure that they always run properly. SNMP was recommended to allow future growth toward remote WAN monitoring to assist fleet operations. Using the Web brings efficient communications and provides faster action in carrying out the tasks and missions.

There are great advantages and benefits in designing and evaluating the Indonesian Eastern Fleet WAN using EXTEND-4 software simulation program. Using EXTEND-4 we measure specific performance variables of our network design in a quantitative fashion. The result of simulation runs of network traffic that consists of email traffic volume, video conferencing network traffic, and data transfer traffic volume indicates that the WAN communication architecture that consists of six FAST ETHERNET 100 Mbps LAN had minimal delays caused by messages collisions and the

load of the network traffic. T1 line 1.544 Mbps connection service provides better results on the average bandwidth delay compared to ISDN 128 Kbps. T1 line has faster transmission than ISDN resulting in less messages collisions and network traffic working more fluently without too much bandwidth delay. The worst case of maximum bandwidth delays showed at the delay within Jayapura main Naval Base LAN using ISDN 128 Kbps (figure 42) along the network traffic is 5 minutes. This maximum bandwidth delay is still within requirement limitations of our WAN traffic flows.

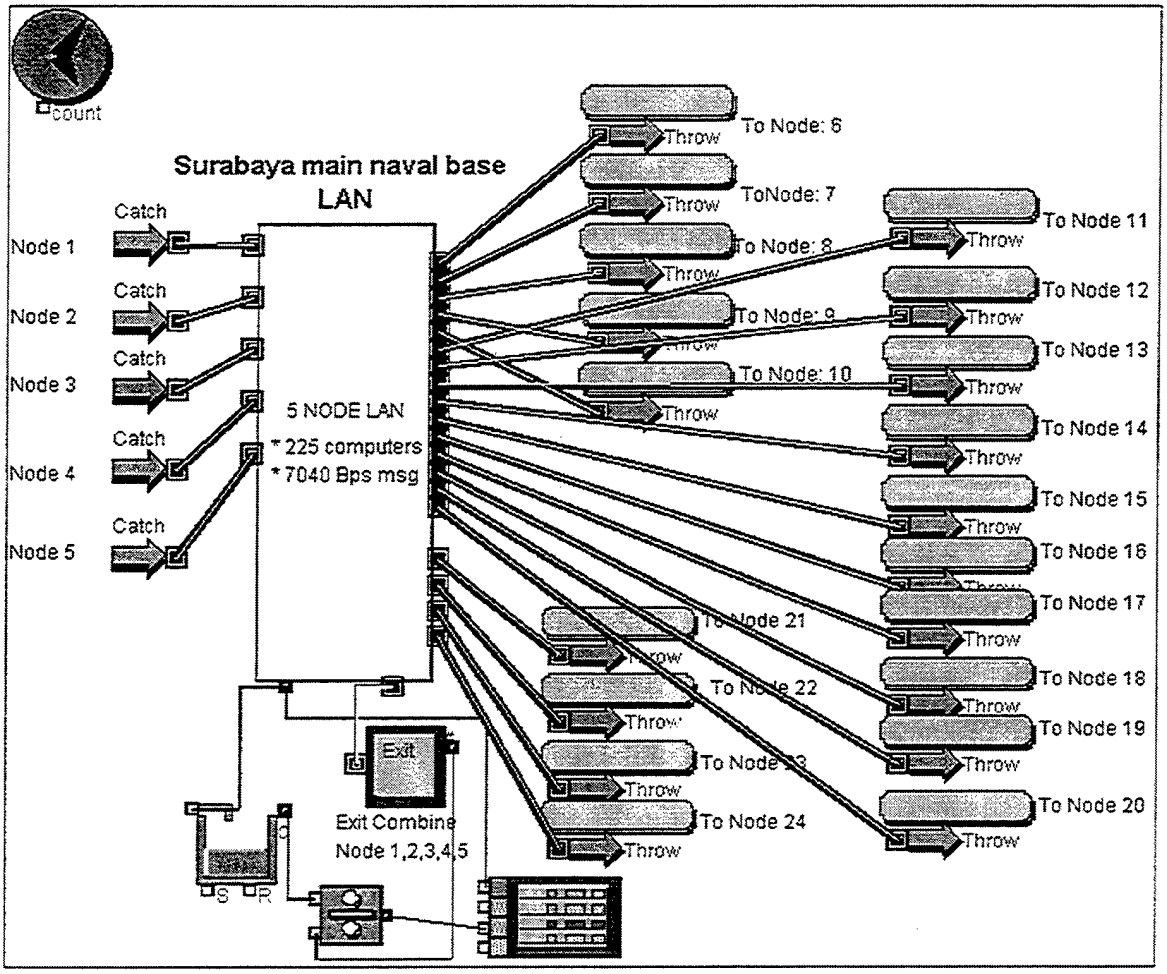
From a total of four simulations run that we conducted, we concluded that the Indonesian Eastern Fleet WAN design either using ISDN 128 Kbps or T1 line 1.5 Mbps was reliable and had good performance in its network traffic management. In this simulation, an increase in delay can readily be seen at the last LAN, which is Jayapura LAN, which showed that the delay climbed sharply caused by the load of the network traffic. We recommend the users of the Indonesian Eastern Fleet WAN define their destination address by priority in order to avoid the network traffic jam and overloaded messages traffic at the busy working time.

The basic configuration of the Indonesian Eastern Fleet wide area network has been built and tested in this thesis. The implementation of web-based network management will maintain and manage our network to run properly and to operate in optimal condition. An area of future research is designing and building mobile platforms networks for supporting operational fleet units including warships and aircraft. Life cycle costs that involve personnel and training need to be included in future research in order to obtain the main goal of an effective and efficient naval fleet. Strategic management needs to take a strong and active leadership role in developing all of the

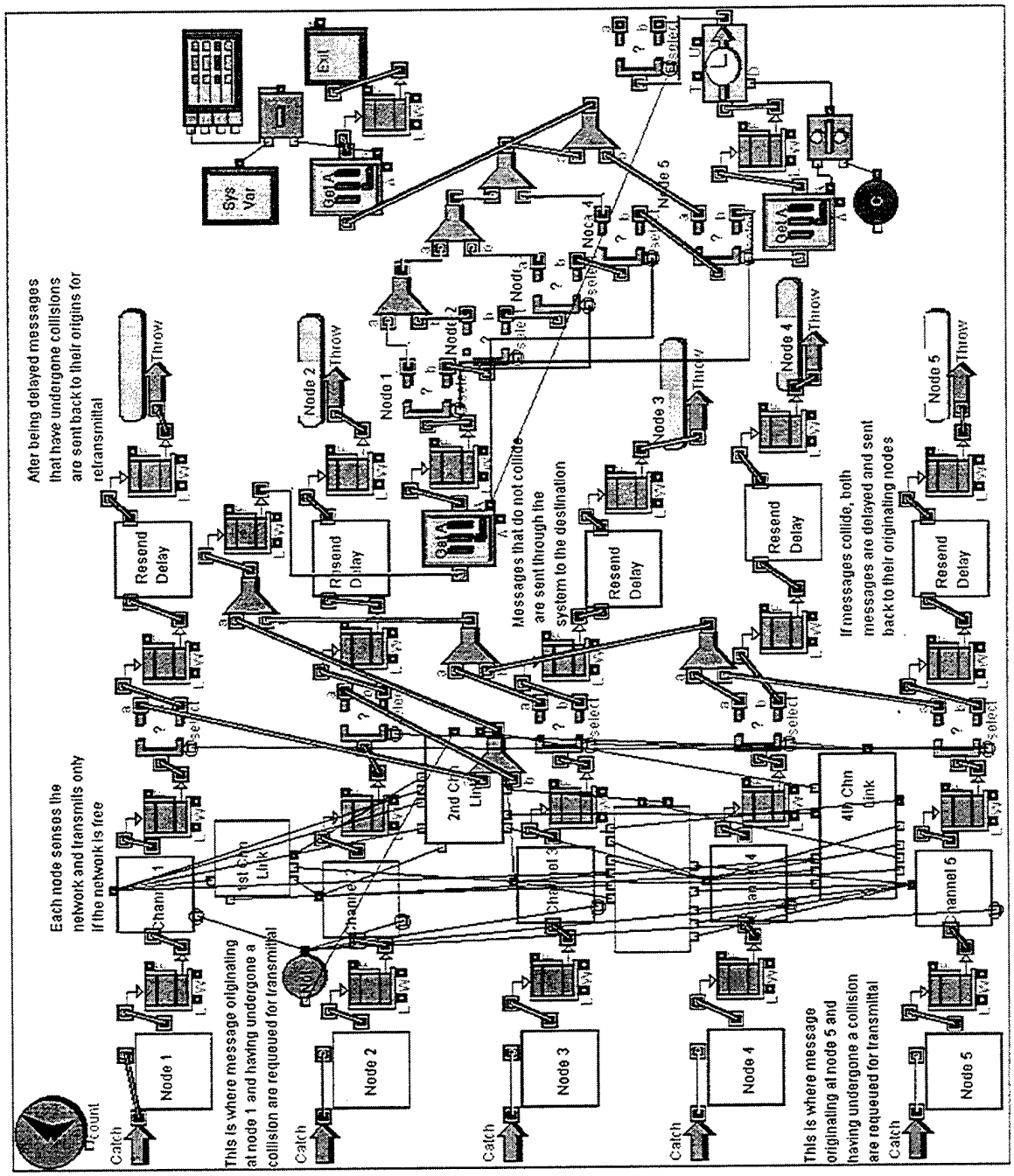
infrastructure to gain a benefit from information technology. The improvement of information technology occurs rapidly and we cannot avoid its influence to our systems. Information technology systems, especially computer communication networks, always improve and keep changing to give performance with time.

# APPENDIX A. NETWORK DESIGN MODEL

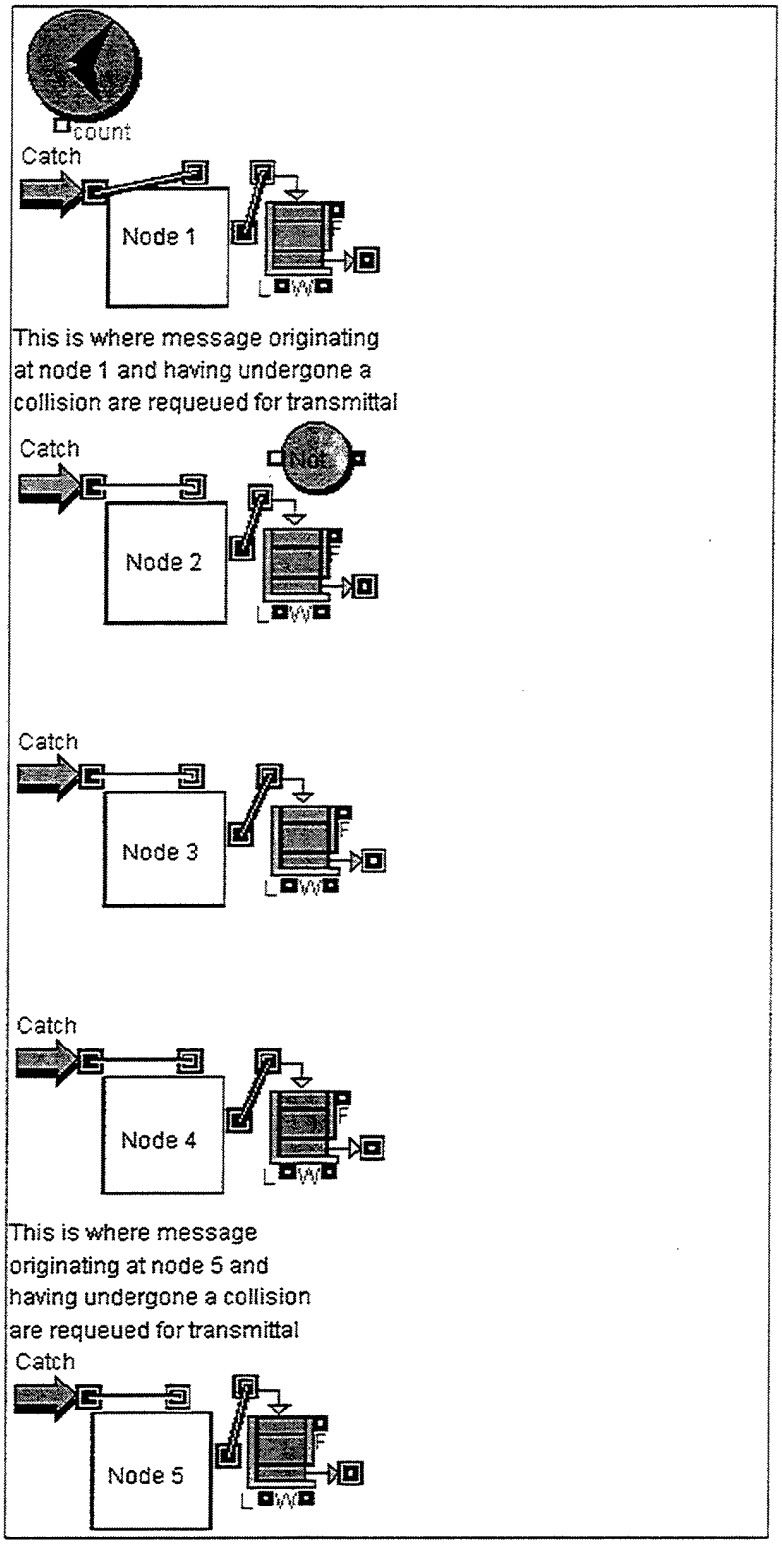
This appendix contains the high level view and detailed view of our local area network design model. The functionality within the model are shown by the low-level design model. Each block is displayed along with the detailed design of the block on the ensuing page. We displayed hierarchical blocks design to layer the model of all blocks. This appendix illustrates the configuration model of messages traffic flow in our Fast Ethernet local area network to all destinations in the wide area network.



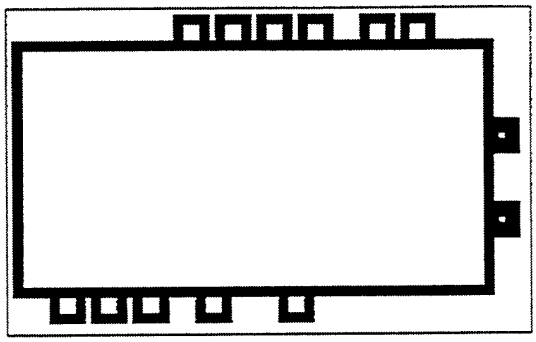

High Level View of LAN Configuration Model



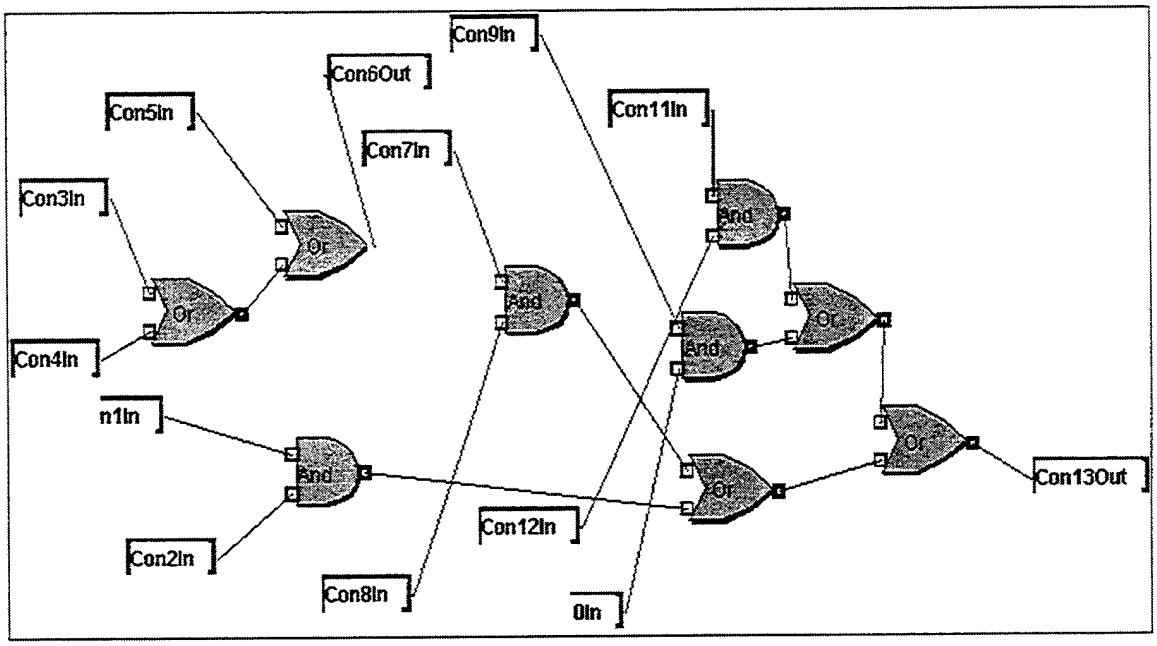

Fast Ethernet LAN Configuration Model



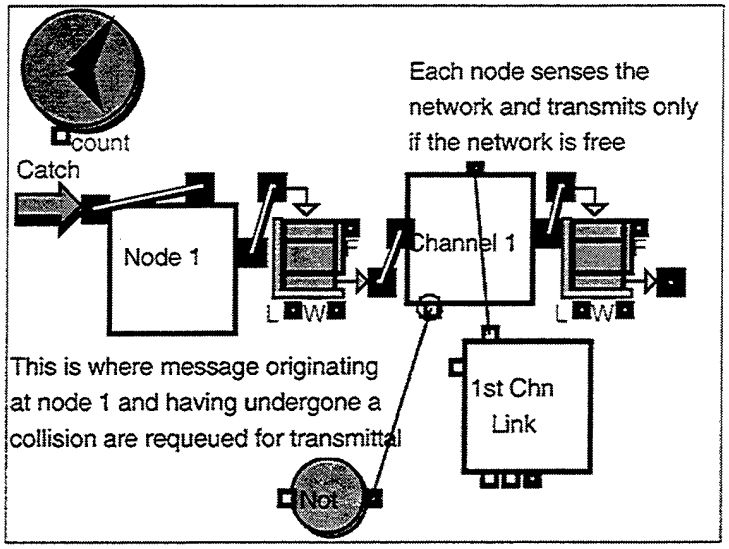

Network Origin Nodes



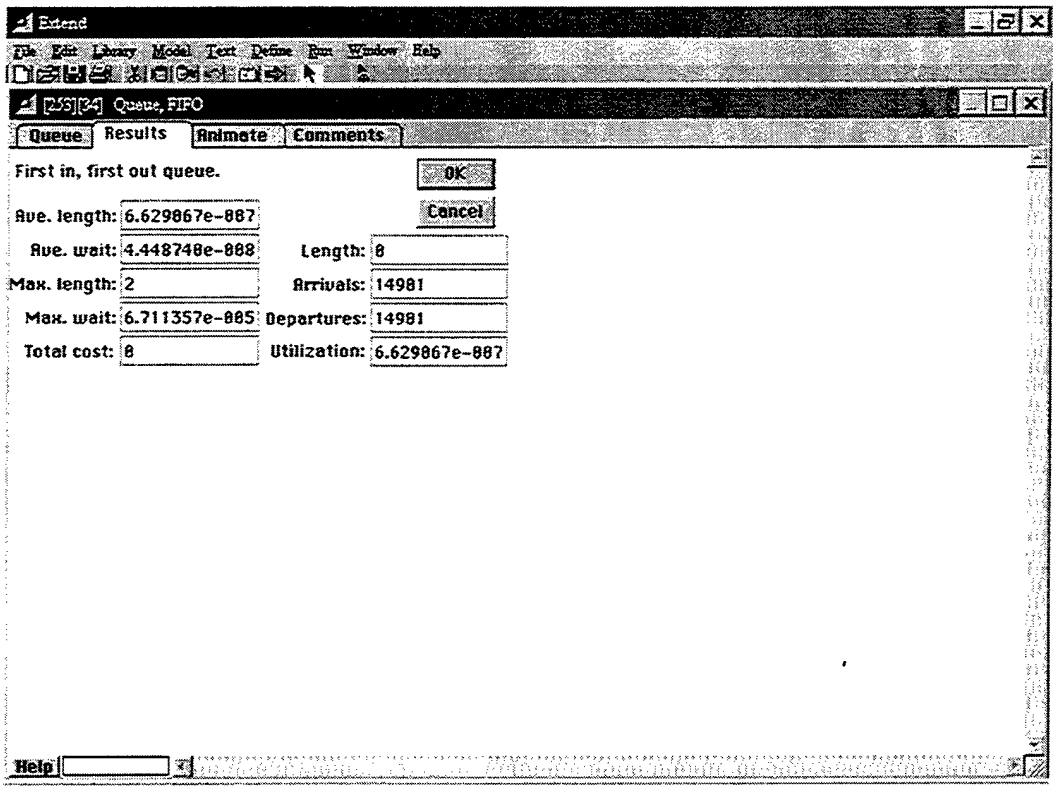
High Level View of LAN Channel Link Sensor



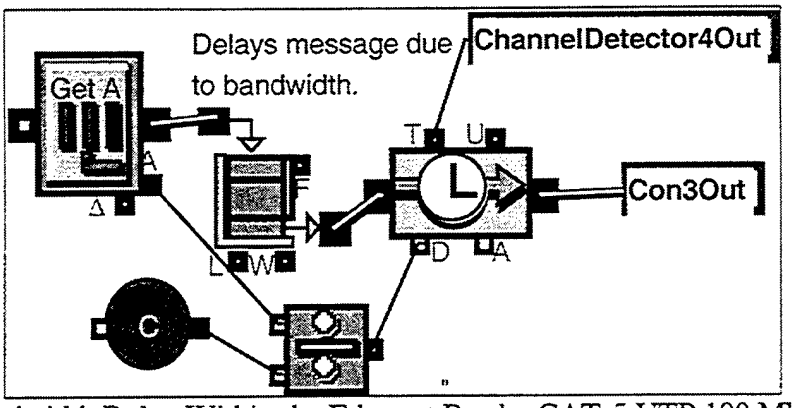

Detailed View of LAN Channel Link Sensor



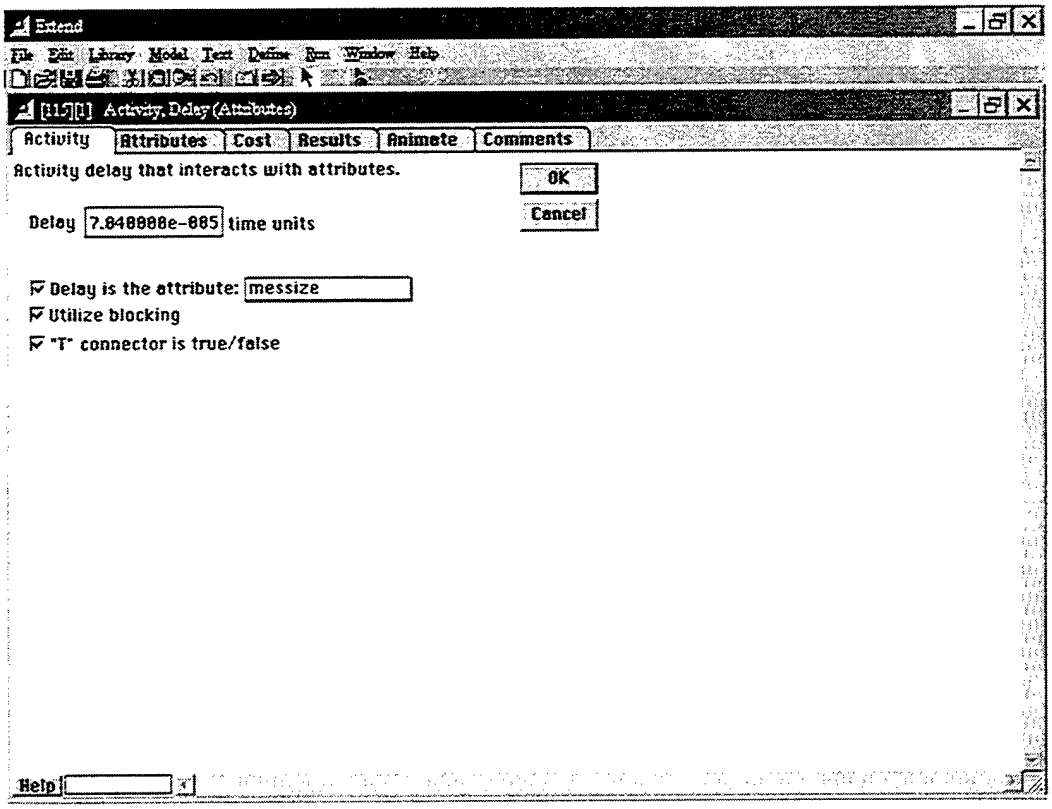

Initial Messages Traffic Flow



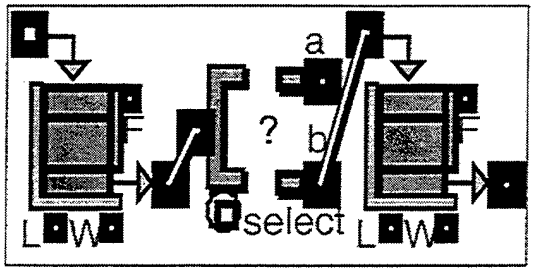

FIFO Queue for the Arrivals and Departures Messages



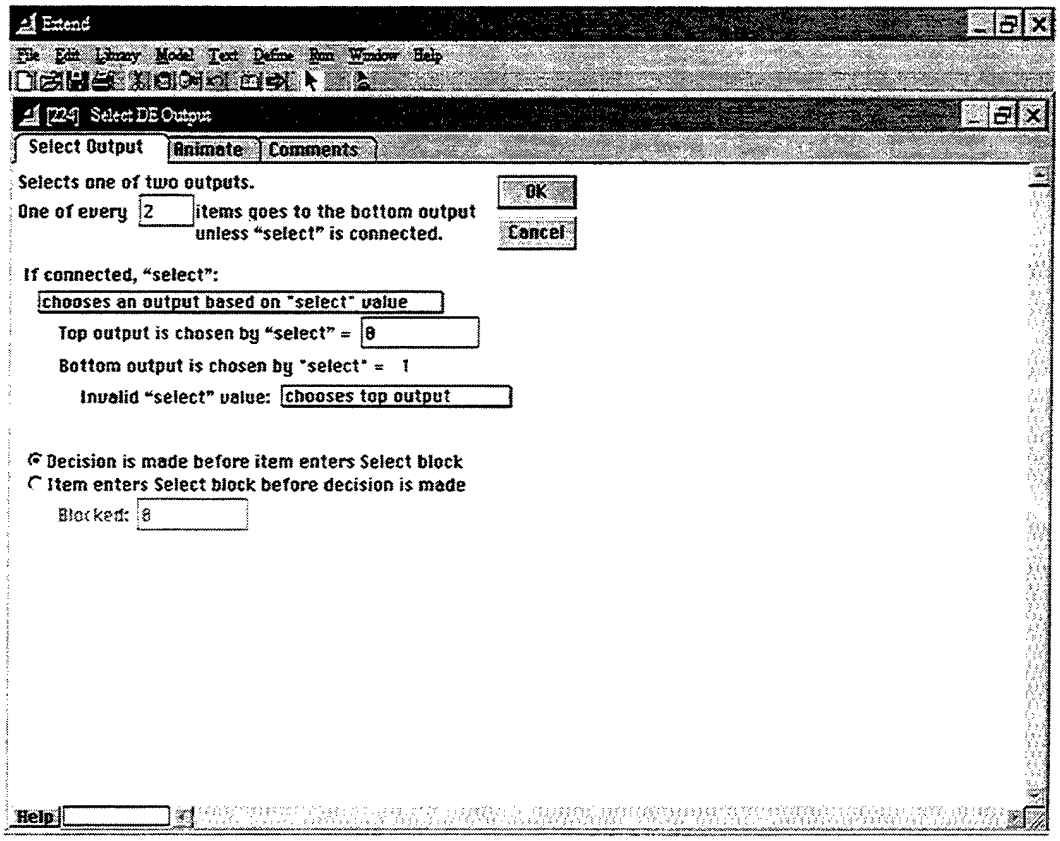

Bandwidth Delay Within the Ethernet Bus by CAT-5 UTP 100 Mbps



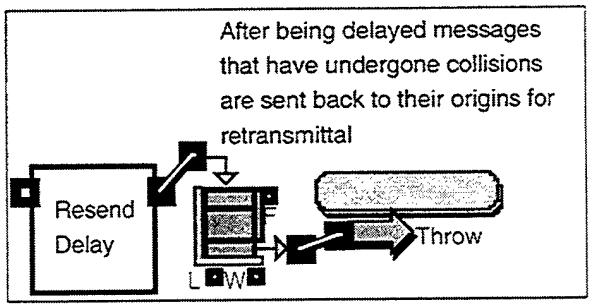

Activity Delay Dialog Box



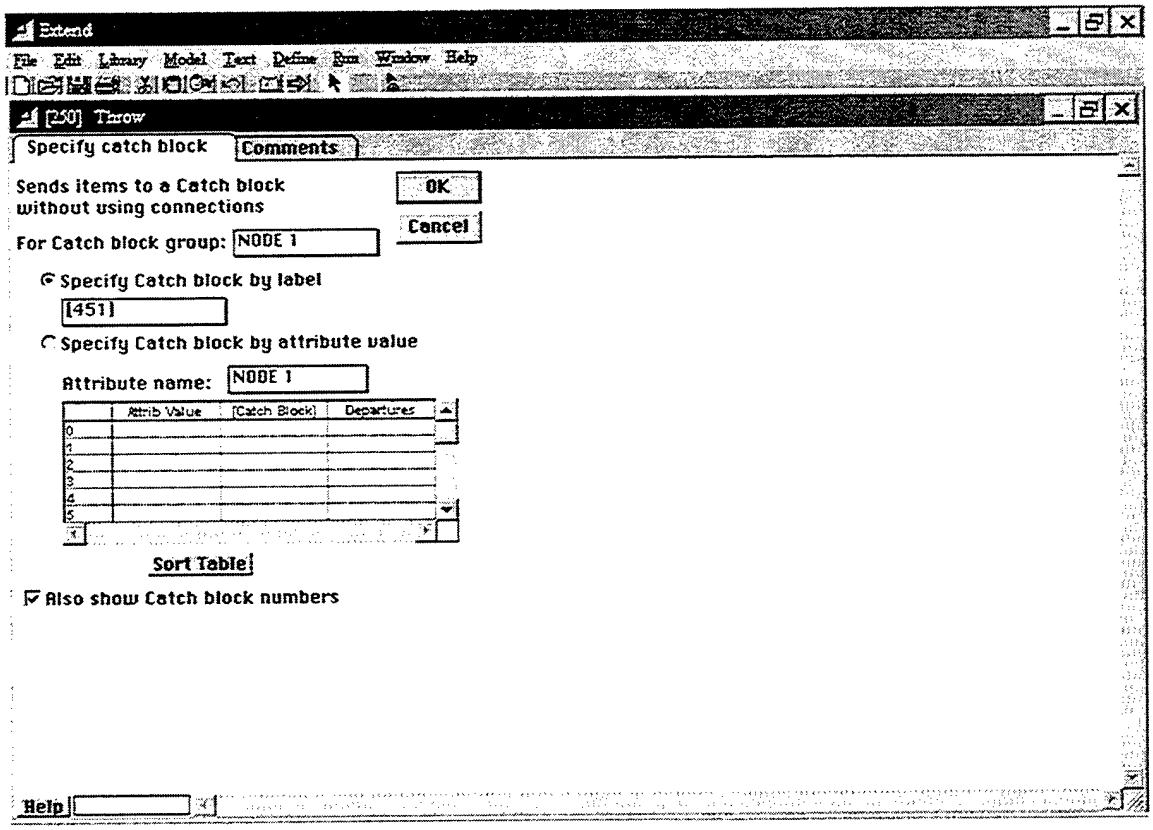

LAN Select Output



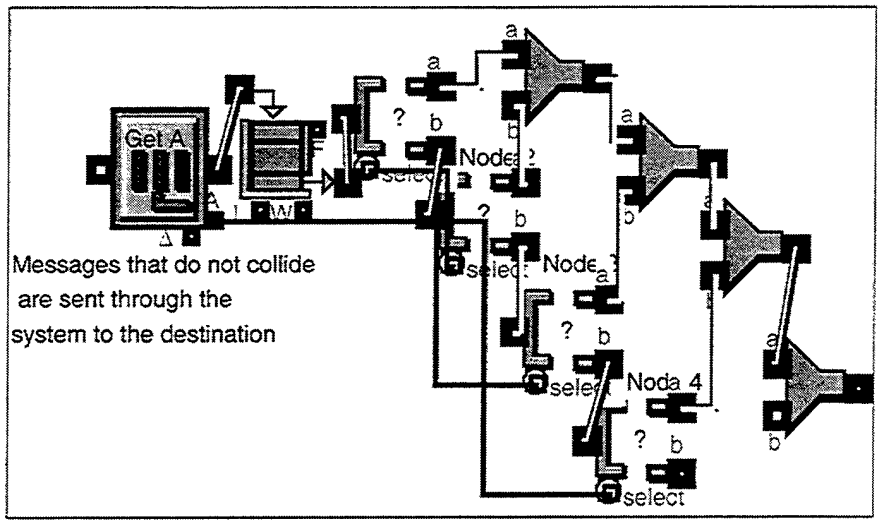

Select Output Dialog Box



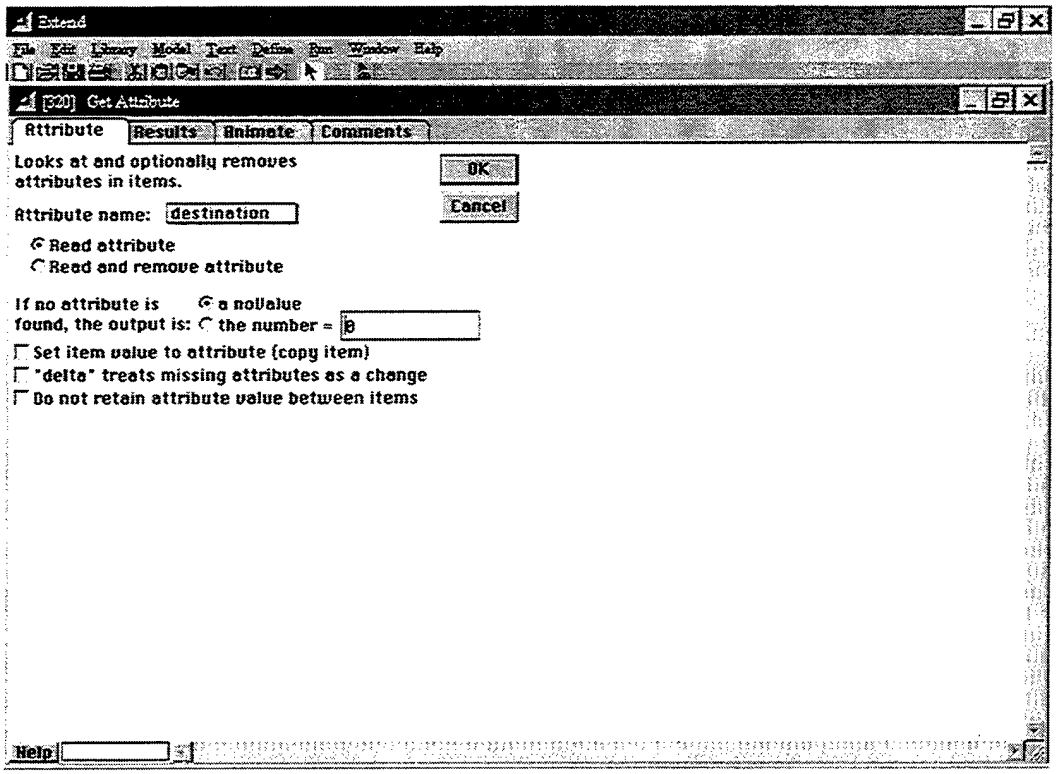

Messages Thrown for Retransmittal



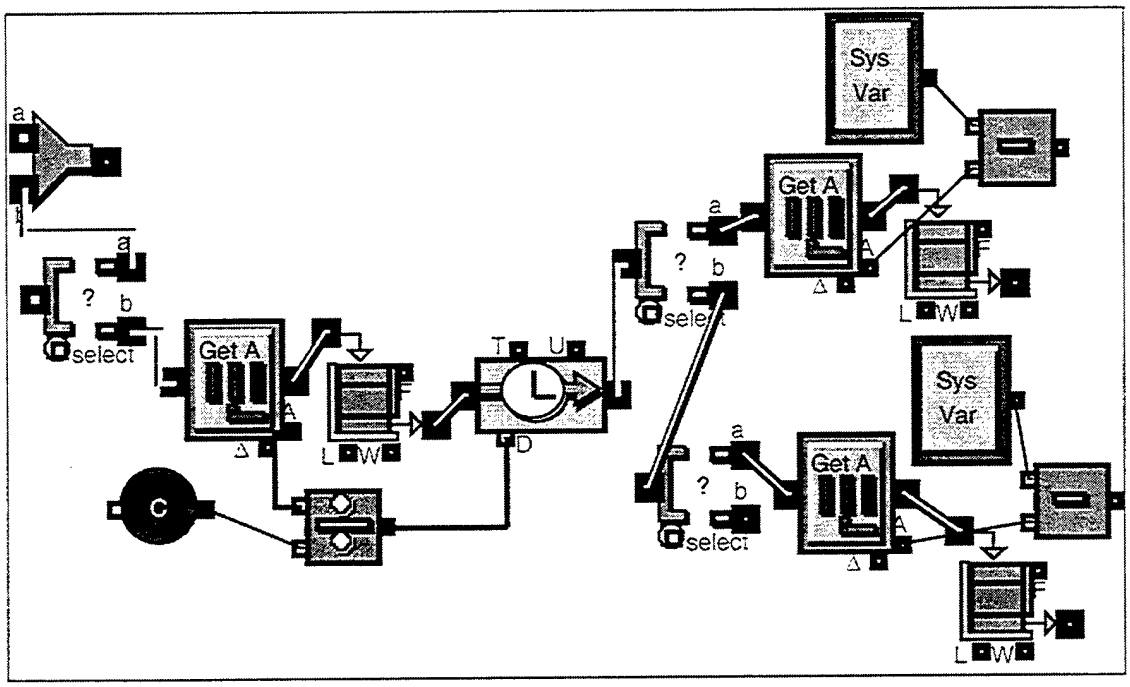

Throw Block Dialog Box




Get Attribute Messages Destination and the Router




Get Attribute Dialog Box




Bandwidth Delay Within the WAN by ISDN/T1 Line Connection Service

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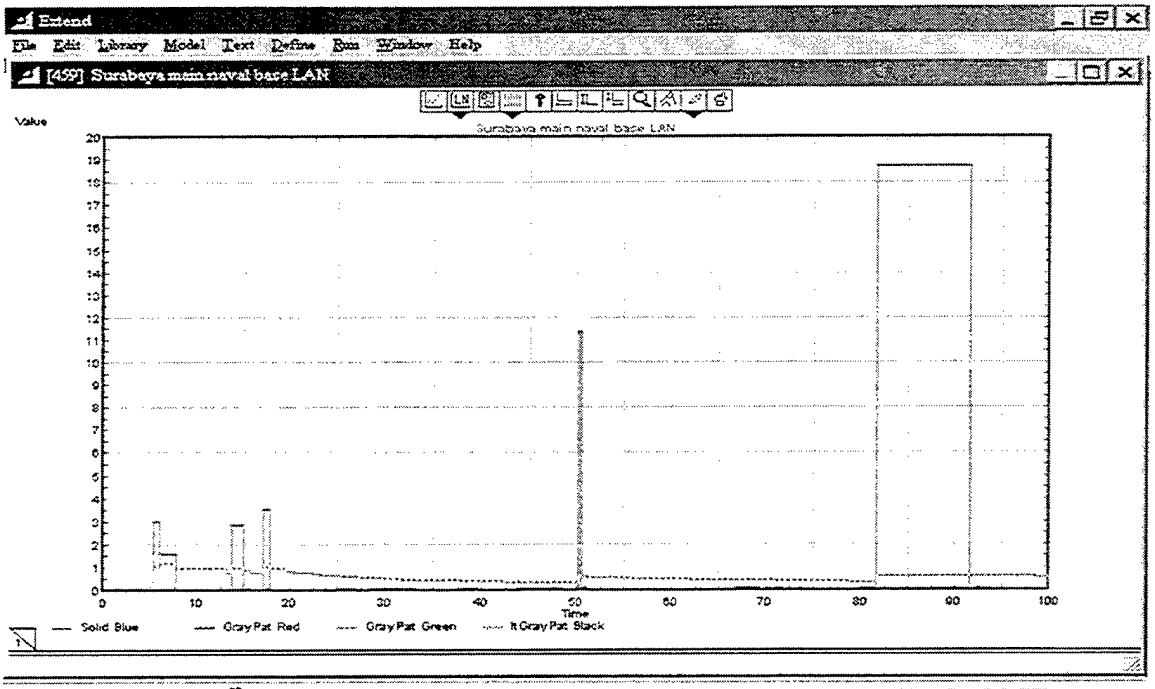
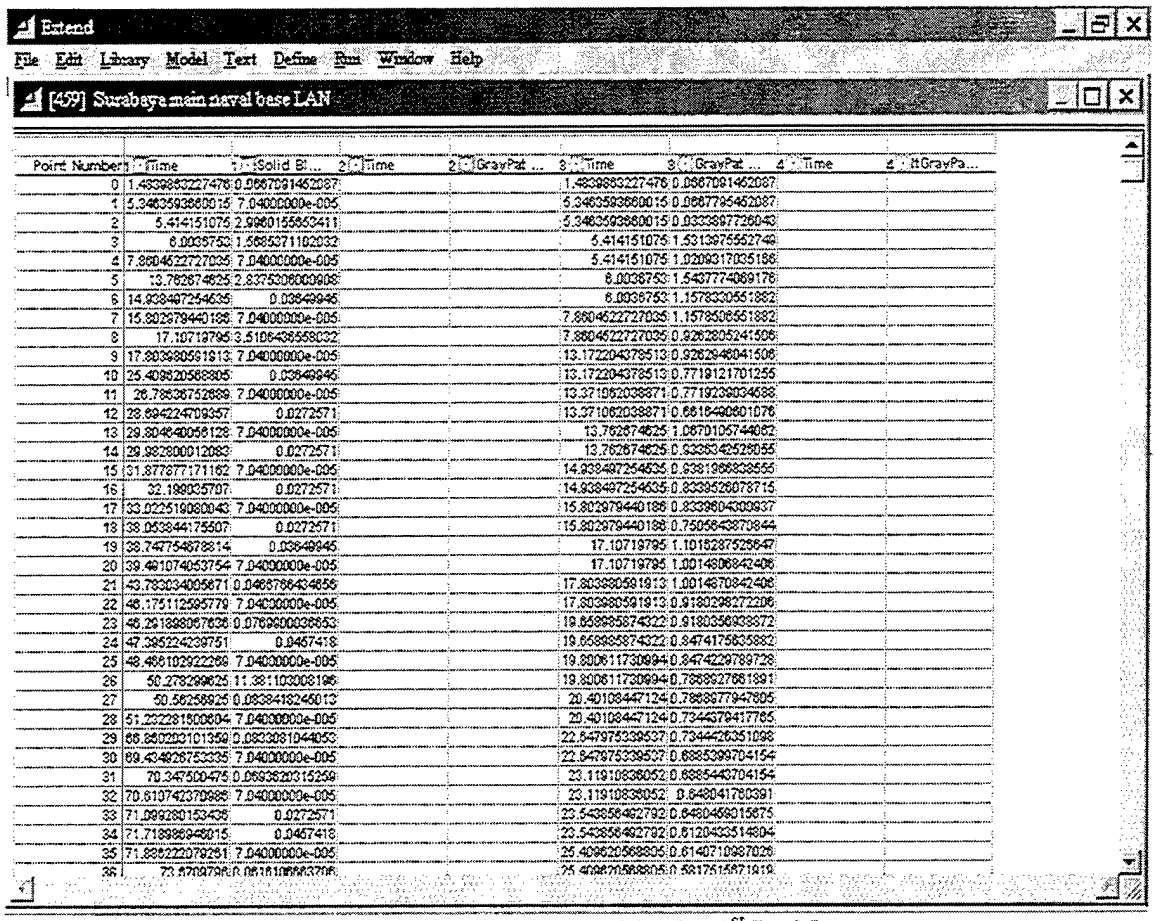
# APPENDIX B. NETWORK TRAFFIC TESTS AND SIMULATION RUNS DATA

This appendix contains the result of our network traffic tests and simulation runs. The graph displays the delay experienced within each of the tested network design over the period of the model. The data shows the arrival time of the message and the delay associated with the message using ISDN 128 Kbps, and T1 line 1.544 Mbps.




Run 0, The 1st LAN, Using Simulation Set Up 100, Mean 1 sec, ISDN 128 Kbps




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 1.483988227476 | 0.0667091462087 | | | 1.483988227476 | 0.0667091462087 | | |
| 1 | 5.346359366015 | 7.04000000e-005 | | | 5.346359366015 | 0.0667795462087 | | |
| 2 | 5.414151075 | 2.99601555553411 | | | 5.346359366015 | 0.0333897726043 | | |
| 3 | 6.0038753 | 1.56853711102032 | | | 5.414151075 | 1.53139755527749 | | |
| 4 | 7.86046227270035 | 7.04000000e-005 | | | 5.414151075 | 1.02093170351186 | | |
| 5 | 13.762874625 | 2.83753060009908 | | | 6.0038753 | 1.54377740691176 | | |
| 6 | 14.938497254635 | 0.03649945 | | | 6.0038753 | 1.15783305518882 | | |
| 7 | 15.802979440186 | 7.04000000e-005 | | | 7.86046227270035 | 1.15785065518882 | | |
| 8 | 17.10719795 | 3.51064365580032 | | | 7.86046227270035 | 0.926280524150 6 | | |
| 9 | 17.803980591913 | 7.04000000e-005 | | | 13.172204378513 | 0.926294604150 6 | | |
| 10 | 25.409620568805 | 0.03649945 | | | 13.172204378513 | 0.771912170125 5 | | |
| 11 | 26.78636752889 | 7.04000000e-005 | | | 13.371062038871 | 0.771923034688 | | |
| 12 | 28.694224709357 | 0.0272571 | | | 13.371062038871 | 0.661649060107 6 | | |
| 13 | 29.804640056128 | 7.04000000e-005 | | | 13.762874625 | 1.06701057440 62 | | |
| 14 | 29.982800012083 | 0.0272571 | | | 13.762874625 | 0.933634252505 5 | | |
| 15 | 31.877877171162 | 7.04000000e-005 | | | 14.938497254635 | 0.938196838555 | | |
| 16 | 32.199035707 | 0.0272571 | | | 14.938497254635 | 0.833952607871 5 | | |
| 17 | 33.022519080043 | 7.04000000e-005 | | | 15.802979440186 | 0.833960400093 7 | | |
| 18 | 38.053844175507 | 0.0272571 | | | 15.802979440186 | 0.750564387084 4 | | |
| 19 | 38.747754678814 | 0.03649945 | | | 17.10719795 | 1.10152875256 47 | | |
| 20 | 39.491074053754 | 7.04000000e-005 | | | 17.10719795 | 1.00148068424 06 | | |
| 21 | 43.793034005671 | 0.0466786434655 | | | 17.803980591913 | 1.00148704842 06 | | |
| 22 | 46.175112595779 | 7.04000000e-005 | | | 17.803980591913 | 0.918029827220 6 | | |
| 23 | 46.291898067636 | 0.0769000036653 | | | 19.658995874322 | 0.918035693887 2 | | |
| 24 | 47.395224239751 | 0.0457418 | | | 19.658995874322 | 0.847417583589 2 | | |
| 25 | 48.466102922269 | 7.04000000e-005 | | | 19.800611730994 | 0.847422978972 8 | | |
| 26 | 50.278299625 | 11.381103008196 | | | 19.800611730994 | 0.788692768189 1 | | |
| 27 | 50.56256925 | 0.0838418246013 | | | 20.40108447124 | 0.788697794760 5 | | |
| 28 | 51.232281500604 | 7.04000000e-005 | | | 20.40108447124 | 0.734437941778 5 | | |
| 29 | 66.860203101359 | 0.0833081044053 | | | 22.847975339537 | 0.734442635109 8 | | |
| 30 | 69.434826753335 | 7.04000000e-005 | | | 22.847975339537 | 0.688539970415 4 | | |
| 31 | 70.347500475 | 0.0693620315259 | | | 23.119108386052 | 0.688544270415 4 | | |
| 32 | 70.610742370986 | 7.04000000e-005 | | | 23.119108386052 | 0.648041760391 | | |
| 33 | 71.099280153436 | 0.0272571 | | | 23.543856492792 | 0.648046901567 5 | | |
| 34 | 71.718996946015 | 0.0457418 | | | 23.543856492792 | 0.612043251480 4 | | |
| 35 | 71.886222079251 | 7.04000000e-005 | | | 25.409620568805 | 0.614071098702 6 | | |
| 36 | 73.570979[illegible] | 0.0618106663706 | | | 25.409620568805 | 0.581751587191 9 | | |

Run 0, Data Delay within the 1st LAN

Extend

File Edit Library Model Text Define Run Window Help

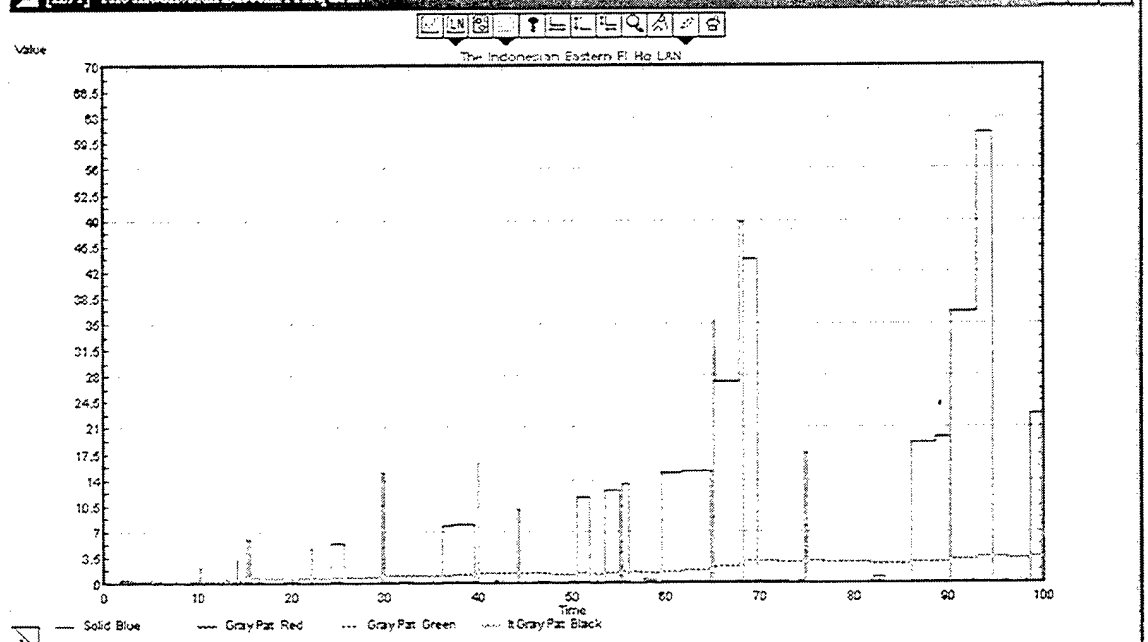
[459] Surabaya main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 36 | 73.6709796 | 0.0516196663706 | | | 25.4096205683805 | 0.581755167191 | | |
| 37 | 73.9022532583312 | 7.04000000e-005 | | | 26.7863675268689 | 0.581755272465 | | |
| 38 | 75.7760543680008 | 0.0364492946 | | | 26.7863675268689 | 0.552567508932 | | |
| 39 | 75.7762219899409 | 7.04000000e-005 | | | 27.3257997446531 | 0.552571028832 | | |
| 40 | 79.8838373461108 | 0.0404489382334 | | | 27.3257997446531 | 0.526355360792 | | |
| 41 | 81.5015808375001 | 13.5906519748831 | | | 28.5942247093957 | 0.527651317935 | | |
| 42 | 91.7007419523313 | 7.04000000e-005 | | | 28.5942247093957 | 0.503687167120 | | |
| 43 | 92.3216483502212 | 0.0272571 | | | 29.8048405661 29 | 0.503670367120 | | |
| 44 | 93.9106229485576 | 7.04000000e-005 | | | 29.8048405661 29 | 0.481771655506 | | |
| 45 | 100 | 7.04000000e-005 | | | 29.9828000120 83 | 0.482956746810 | | |
| 46 | | | | | 29.9828000120 83 | 0.462830549027 | | |
| 47 | | | | | 31.8778777171 162 | 0.462836492653 | | |
| 48 | | | | | 31.8778777171 162 | 0.444023922065 | | |
| 49 | | | | | 32.199035707 | 0.446413307065 9 | | |
| 50 | | | | | 32.199035707 | 0.428282026024 9 | | |
| 51 | | | | | 33.0225190800 43 | 0.428284793717 2 | | |
| 52 | | | | | 33.0225190800 43 | 0.412422335172 1 | | |
| 53 | | | | | 34.3904461857 12 | 0.412424943579 5 | | |
| 54 | | | | | 34.3904461857 12 | 0.397695431208 8 | | |
| 55 | | | | | 37.9797677763 9 | 0.397597995594 6 | | |
| 56 | | | | | 37.9797677763 9 | 0.383984271608 5 | | |
| 57 | | | | | 38.0538441755 07 | 0.384924171608 5 | | |
| 58 | | | | | 38.0538441755 07 | 0.372093365888 2 | | |
| 59 | | | | | 38.7477546785 14 | 0.372031001422 16 | | |
| 60 | | | | | 38.7477546785 14 | 0.361267755693 | | |
| 61 | | | | | 39.4910740507 54 | 0.361270028666 | | |
| 62 | | | | | 39.4910740507 54 | 0.349980338327 | | |
| 63 | | | | | 42.4750290754 74 | 0.349982538327 | | |
| 64 | | | | | 42.4750290754 74 | 0.339377006681 | | |
| 65 | | | | | 43.7820340056 71 | 0.340791456096 | | |
| 66 | | | | | 43.7820340056 71 | 0.330768172650 4 | | |
| 67 | | | | | 46.1751125957 79 | 0.330770243238 6 | | |
| 68 | | | | | 46.1751125957 79 | 0.321319564850 4 | | |
| 69 | | | | | 46.2919980676 36 | 0.320519379260 8 | | |
| 70 | | | | | 46.2919980676 36 | 0.314632729827 2 | | |
| 71 | | | | | 47.3952242397 51 | 0.315800053827 | | |
| 72 | | | | | 47.3952242397 51 | 0.307763110171 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN




Run 0, The 2nd LAN, Using Simulation Set Up 100, Mean 1 sec, ISDN 128 Kbps

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.0001658 | 0.0001658 | | | 0.0001658 | 0.0001658 | | |
| 1 | 0.09154705 | 0.09154705 | | | 0.09154705 | 0.09171285 | | |
| 2 | 0.1185543 | 0.1185543 | | | 0.09154705 | 0.046856425 | | |
| 3 | 0.224973056894 | 8.29000000e-005 | | | 0.1185543 | 0.105133575 | | |
| 4 | 1.26054468621 | 0.067546394999 | | | 0.1185543 | 0.07006905 | | |
| 5 | 1.40118519334 | 8.29000000e-005 | | | 0.224973056894 | 0.0701188833333 | | |
| 6 | 1.75654705 | 0.292851322044 | | | 0.224973056894 | 0.0525875125 | | |
| 7 | 2.95948331714 | 8.29000000e-005 | | | 1.26054468621 | 0.0594741087499 | | |
| 8 | 3.3433383 | 0.113582306530 | | | 1.26054468621 | 0.0555792869999 | | |
| 9 | 4.783992425 | 0.0899491239132 | | | 1.40118519334 | 0.0555958869999 | | |
| 10 | 5.636843825 | 0.224678146879 | | | 1.40118519334 | 0.0463298891666 | | |
| 11 | 6.056521320890 | 0.0568831939749 | | | 1.49460308701 | 0.0463437058333 | | |
| 12 | 8.150541449402 | 8.29000000e-005 | | | 1.49460308701 | 0.0397231764285 | | |
| 13 | 9.291850475 | 0.160201831798 | | | 1.75654705 | 0.0815305081492 | | |
| 14 | 10.247433869265 | 8.29000000e-005 | | | 1.75654705 | 0.0713391946305 | | |
| 15 | 10.306659 | 2.00994985120 | | | 2.95948331714 | 0.0713495571305 | | |
| 16 | 10.31865001893 | 8.29000000e-005 | | | 2.95948331714 | 0.0834218285605 | | |
| 17 | 13.069196775 | 0.312774281244 | | | 3.3433383 | 0.0760420848416 | | |
| 18 | 13.42282249319 | 8.29000000e-005 | | | 3.3433383 | 0.0684378762575 | | |
| 19 | 14.22025275 | 0.047288623939 | | | 4.783992425 | 0.0774327888598 | | |
| 20 | 14.260867425 | 0.135163353006 | | | 4.783992425 | 0.0703934442353 | | |
| 21 | 15.22873685 | 5.64326541187 | | | 5.636843825 | 0.0908187303152 | | |
| 22 | 15.241864325 | 5.84344591846 | | | 5.636843825 | 0.0822505027789 | | |
| 23 | 15.55646583271 | 8.29000000e-005 | | | 6.056521320890 | 0.0879907689535 | | |
| 24 | 16.16538438675 | 8.29000000e-005 | | | 6.056521320890 | 0.0812222482649 | | |
| 25 | 16.31474365 | 0.146407420406 | | | 8.150541449402 | 0.0812286251879 | | |
| 26 | 18.77710258191 | 8.29000000e-005 | | | 8.150541449402 | 0.0754265305316 | | |
| 27 | 19.18156227862 | 0.199969758003 | | | 9.291850475 | 0.0827931399468 | | |
| 28 | 20.64460319722 | 8.29000000e-005 | | | 9.291850475 | 0.0772782539495 | | |
| 29 | 22.121123925 | 4.62840384210 | | | 10.247433869265 | 0.0772637906151 | | |
| 30 | 22.14654355143 | 8.29000000e-005 | | | 10.247433869265 | 0.0724635537026 | | |
| 31 | 24.314705875 | 5.30058460050 | | | 10.306659 | 0.198075419409 | | |
| 32 | 25.540420589375 | 8.29000000e-005 | | | 10.306659 | 0.186429241496 | | |
| 33 | 29.540374151085 | 14.987465823589 | | | 10.31865001893 | 0.186428808201 | | |
| 34 | 29.933409225085 | 0.195932611740 | | | 10.31865001893 | 0.176071645030 | | |
| 35 | 30.12919561847 | 8.29000000e-005 | | | 10.68091536884 | 0.176078250585 | | |
| 36 | 30.35313232608 | 0.420315142201 | | | 10.68091536884 | 0.166809079502 | | |

Run 0, Data Delay within the 2nd LAN

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 36 | 30.35313232608 | 0.420315142201 | | | 10.68091536884 | 0.166809079502 | | |
| 37 | 30.54931904954 | 8.29000000e-005 | | | 12.196404633359 | 0.166513442560 | | |
| 38 | 31.69034435 | 0.155069139268 | | | 12.196404633359 | 0.158472770527 | | |
| 39 | 32.84636094744 | 8.29000000e-005 | | | 13.069196775 | 0.174111846894 | | |
| 40 | 35.112284 | 7.75817056695 | | | 13.069196775 | 0.165820461513 | | |
| 41 | 37.1569715 | 7.87460258991 | | | 13.42282249319 | 0.158284091327 | | |
| 42 | 39.48503135434 | 0.344170683910 | | | 13.42282249319 | 0.158285935900 | | |
| 43 | 39.63141380434 | 0.282993951427 | | | 14.22025275 | 0.296800052628 | | |
| 44 | 40.02620229347 | 15.13952834739 | | | 14.22025275 | 0.263895705034 | | |
| 45 | 40.04191271390 | 8.29000000e-005 | | | 14.260867425 | 0.289772372642 | | |
| 46 | 41.76822994397 | 0.322945251508 | | | 14.260867425 | 0.277589523782 | | |
| 47 | 42.06023513286 | 8.29000000e-005 | | | 15.22873685 | 0.512883746277 | | |
| 48 | 43.54412725040 | 0.0551408 | | | 15.22873685 | 0.492325199306 | | |
| 49 | 44.197518375 | 9.85309339594 | | | 15.241864325 | 0.726063035044 | | |
| 50 | 44.32943742346 | 8.29000000e-005 | | | 15.241864325 | 0.698137534658 | | |
| 51 | 46.73227299321 | 0.0551408 | | | 15.55646583271 | 0.698140723119 | | |
| 52 | 46.40382092934 | 0.190159385926 | | | 15.55646583271 | 0.872286593006 | | |
| 53 | 46.44022897934 | 0.098155703152 | | | 16.16538438675 | 0.872286729671 | | |
| 54 | 47.52769148605 | 8.29000000e-005 | | | 16.16538438675 | 0.843276493256 | | |
| 55 | 49.650423325 | 0.161475463622 | | | 16.31474365 | 0.653505325768 | | |
| 56 | 49.88554189486 | 8.29000000e-005 | | | 16.31474365 | 0.630970859362 | | |
| 57 | 50.143174275 | 0.124469117999 | | | 18.77710258191 | 0.630973517993 | | |
| 58 | 50.46306525 | 11.46136603461 | | | 18.77710258191 | 0.609941067284 | | |
| 59 | 51.50246927218 | 8.29000000e-005 | | | 18.85828408387 | 0.609943830717 | | |
| 60 | 53.48335110841 | 12.55186073284 | | | 18.85828408387 | 0.590268232749 | | |
| 61 | 55.01435196872 | 8.29000000e-005 | | | 19.18156227862 | 0.593815612815 | | |
| 62 | 55.158000825 | 0.337135026598 | | | 19.18156227862 | 0.575258874915 | | |
| 63 | 55.249407075 | 13.31002991352 | | | 20.64460319722 | 0.575261465541 | | |
| 64 | 56.04951582994 | 8.29000000e-005 | | | 20.64460319722 | 0.557829299918 | | |
| 65 | 57.2871361 | 0.068996618643 | | | 22.121123925 | 0.698072947925 | | |
| 66 | 57.71471513215 | 8.29000000e-005 | | | 22.121123925 | 0.677541390633 | | |
| 67 | 57.907432525 | 0.504114985782 | | | 22.146546355143 | 0.677543828867 | | |
| 68 | 58.072444325 | 0.417032421373 | | | 22.146546355143 | 0.658185437592 | | |
| 69 | 58.83225540765 | 8.29000000e-005 | | | 22.582593844938 | 0.658187802329 | | |
| 70 | 59.40940085 | 0.080521148746 | | | 22.582593844938 | 0.639904807820 | | |
| 71 | 59.533780175 | 14.77187252868 | | | 24.314705875 | 0.787143286167 | | |
| 72 | 61.7413931 | 15.04492153275 | | | 24.314705875 | 0.768689197903 | | |

Extend

File Edit Library Model Text Define Run Window Help

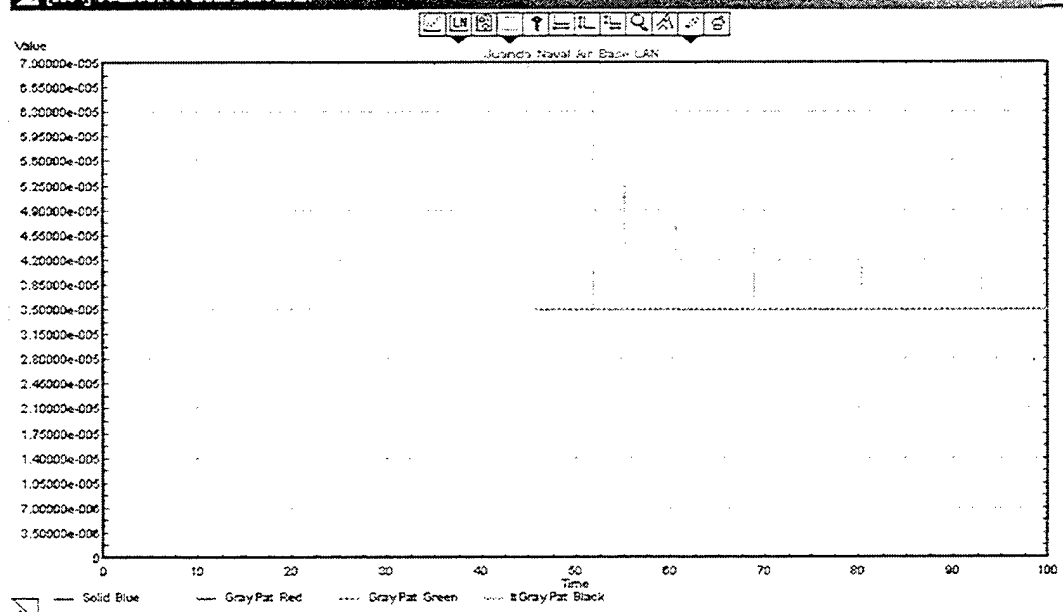
[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 72 | 61.7413931 | 15.044281535228 | | | 24.314705875 | 0.765869123839 | | |
| 73 | 64.68008960704 | 8.29000000e-005 | | | 25.540420589075 | 0.765871343796 | | |
| 74 | 66.0113465 | 25.147438759838 | | | 25.540420589075 | 0.745716854790 | | |
| 75 | 66.159165175 | 27.119703408243 | | | 25.524176594958 | 0.745719038369 | | |
| 76 | 67.7060806 | 48.570191059737 | | | 25.524176594958 | 0.725598235437 | | |
| 77 | 68.130784764746 | 0.0551408 | | | 26.560371754493 | 0.726500181073 | | |
| 78 | 68.229393375 | 40.522415921716 | | | 26.560371754493 | 0.708435157051 | | |
| 79 | 69.64429735 | 0.022958764253 | | | 27.338020903861 | 0.708437229651 | | |
| 80 | 70.083918525 | 0.173801209585 | | | 27.338020903861 | 0.691158272732 | | |
| 81 | 70.476444925 | 0.115725583158 | | | 27.485556078864 | 0.691150294684 | | |
| 82 | 71.87112405 | 0.105862379485 | | | 27.485556078864 | 0.674704097191 | | |
| 83 | 73.062406693284 | 8.29000000e-005 | | | 27.940147012488 | 0.674706071001 | | |
| 84 | 74.16508085 | 0.223201835521 | | | 27.940147012488 | 0.659015232140 | | |
| 85 | 74.76963955 | 17.410859313598 | | | 28.51779852588 | 0.659017160047 | | |
| 86 | 74.937089045891 | 0.0544794 | | | 28.51779852588 | 0.644039497319 | | |
| 87 | 75.094252525486 | 8.29000000e-005 | | | 29.640374151095 | 0.982390785603 | | |
| 88 | 78.502925420209 | 0.0544794 | | | 29.640374151095 | 0.960559850125 | | |
| 89 | 78.612439948392 | 8.29000000e-005 | | | 29.933409226095 | 0.984910419163 | | |
| 90 | 79.718305751465 | 0.079461589599 | | | 29.933409226095 | 0.943937528639 | | |
| 91 | 80.647461479477 | 8.29000000e-005 | | | 30.12919551847 | 0.943939308125 | | |
| 92 | 81.771397601465 | 0.117054620242 | | | 30.12919551847 | 0.923855515203 | | |
| 93 | 82.158114929822 | 0.721487195874 | | | 30.353132326085 | 0.902799390629 | | |
| 94 | 83.227114575283 | 8.29000000e-005 | | | 30.353132326085 | 0.913965090824 | | |
| 95 | 89.117652825001 | 18.928586718375 | | | 30.549319046548 | 0.913966179078 | | |
| 96 | 89.670120300001 | 19.661935238446 | | | 30.549319046548 | 0.894726678766 | | |
| 97 | 90.143168567709 | 8.29000000e-005 | | | 31.69034435 | 0.898095436711 | | |
| 98 | 90.304038885881 | 25.547957236865 | | | 31.69034435 | 0.880132527989 | | |
| 99 | 92.972194075001 | 60.768402119541 | | | 32.846360947444 | 0.880135185978 | | |
| 100 | 94.682312990131 | 8.29000000e-005 | | | 32.846360947444 | 0.862877623310 | | |
| 101 | 95.817082975001 | 0.092152304456 | | | 34.172138392543 | 0.862879258800 | | |
| 102 | 96.043885992689 | 8.29000000e-005 | | | 34.172138392543 | 0.845285426800 | | |
| 103 | 98.194093752124 | 0.143768661302 | | | 35.688880842572 | 0.846287021131 | | |
| 104 | 98.536781265463 | 0.0544794 | | | 35.688880842572 | 0.830031934187 | | |
| 105 | 98.577072625002 | 22.982594325561 | | | 36.112284 | 0.976899182226 | | |
| 106 | 99.970249100002 | 0.484980824082 | | | 36.112284 | 0.9588128827 | | |
| 107 | 100 | 0.484980824082 | | | 37.15697715 | 1.104444121428 | | |
| 108 | | | | | 37.15697715 | 1.084939804843 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1604] Juanda Naval Air Base LAN




Run 0, The 3rd LAN,

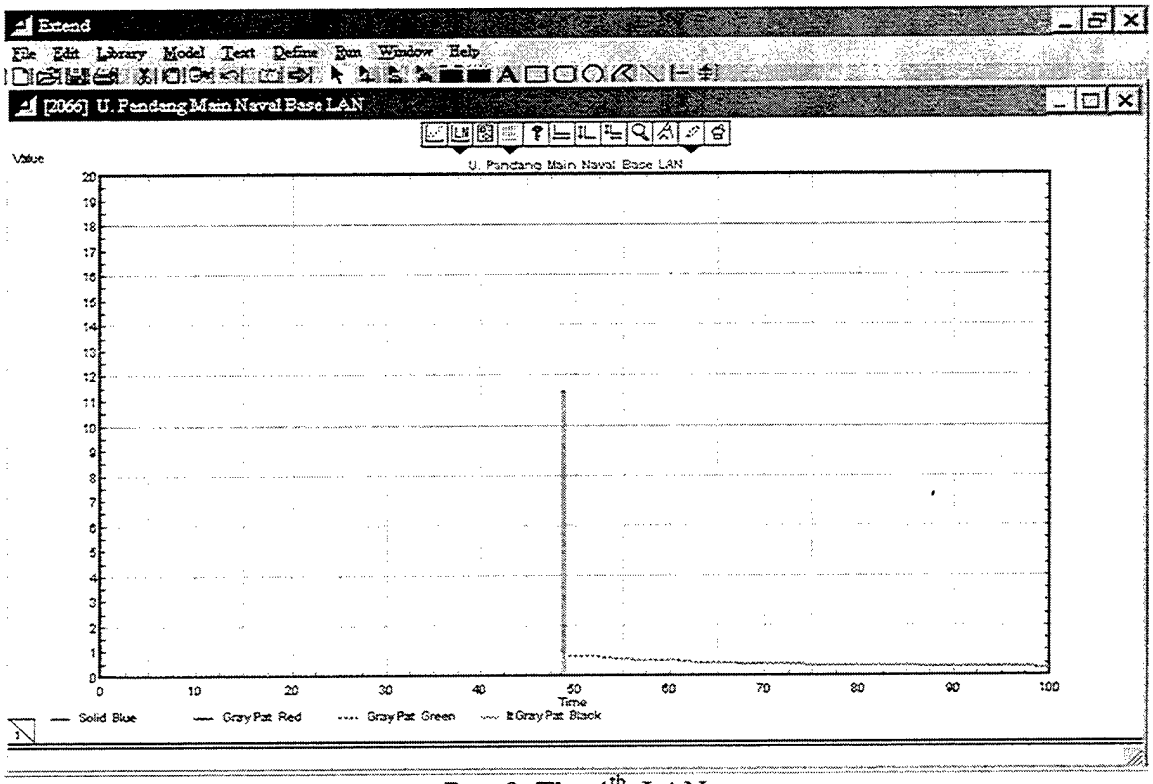
Extend

File Edit Library Model Text Define Run Window Help

[1604] Juanda Naval Air Base LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 45.890473280708 | 3.48000000e-005 | | | 45.890473280708 | 3.48000000e-005 | | |
| 1 | 68.985227188559 | 3.48000000e-005 | | | 51.937724715679 | 6.95000000e-005 | | |
| 2 | 100 | 3.48000000e-005 | | | 51.937724715679 | 3.48000000e-005 | | |
| 3 | | | | | 55.350733965784 | 5.22000000e-005 | | |
| 4 | | | | | 55.350733965784 | 3.48000000e-005 | | |
| 5 | | | | | 60.598248807256 | 4.64000000e-005 | | |
| 6 | | | | | 60.598248807256 | 3.48000000e-005 | | |
| 7 | | | | | 68.985227188559 | 4.35000000e-005 | | |
| 8 | | | | | 68.985227188559 | 3.48000000e-005 | | |
| 9 | | | | | 71.499900810384 | 4.17600000e-005 | | |
| 10 | | | | | 71.499900810384 | 3.48000000e-005 | | |
| 11 | | | | | 80.470427143154 | 4.06000000e-005 | | |
| 12 | | | | | 80.470427143154 | 3.48000000e-005 | | |
| 13 | | | | | 87.876599494899 | 3.97714286e-005 | | |
| 14 | | | | | 87.876599494899 | 3.48000000e-005 | | |
| 15 | | | | | 92.841392162617 | 3.91500000e-005 | | |
| 16 | | | | | 92.841392162617 | 3.48000000e-005 | | |
| 17 | | | | | 100 | 3.48000000e-005 | | |

Run 0, Data Delay within the 3rd LAN




Run 0, The 4th LAN

Extend

File Edit Library Model Text Define Run Window Help

[2066] U. Pandang Main Naval Base LAN

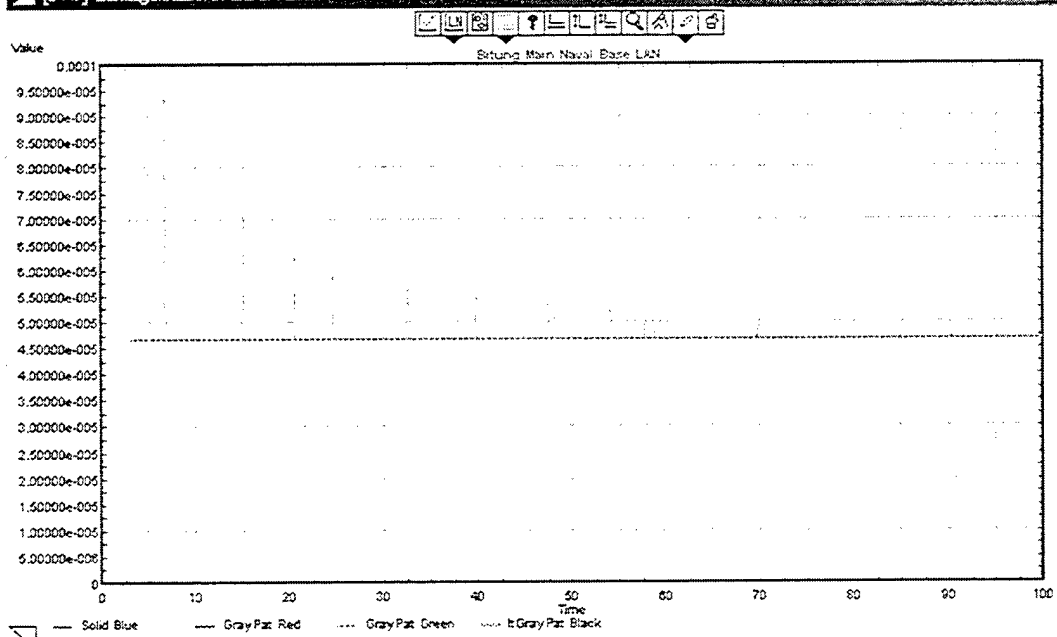
| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 1.78113737982256 | 5.84000000e-005 | | | 1.78113737982256 | 5.84000000e-005 | | |
| 1 | 5.10073699096213 | 5.84000000e-005 | | | 5.10073699096213 | 0.0001168 | | |
| 2 | 48.75869025 | 11.32683859007 | | | 5.10073699096213 | 5.84000000e-005 | | |
| 3 | 49.0280485980048 | 5.84000000e-005 | | | 6.01359152443011 | 8.75000000e-005 | | |
| 4 | 100 | 5.84000000e-005 | | | 6.01359152443011 | 5.84000000e-005 | | |
| 5 | | | | | 17.5229071176614 | 7.78666667e-005 | | |
| 6 | | | | | 17.5229071176614 | 5.84000000e-005 | | |
| 7 | | | | | 19.6505448756672 | 7.20000000e-005 | | |
| 8 | | | | | 19.6505448756672 | 5.84000000e-005 | | |
| 9 | | | | | 25.5957440857757 | 7.00800000e-005 | | |
| 10 | | | | | 25.5957440857757 | 5.84000000e-005 | | |
| 11 | | | | | 25.1009281754414 | 6.81333333e-005 | | |
| 12 | | | | | 25.1009281754414 | 5.84000000e-005 | | |
| 13 | | | | | 30.5470822042253 | 6.67428571e-005 | | |
| 14 | | | | | 30.5470822042253 | 5.84000000e-005 | | |
| 15 | | | | | 31.9341929163376 | 6.57000000e-005 | | |
| 16 | | | | | 31.9341929163376 | 5.84000000e-005 | | |
| 17 | | | | | 37.0251470690098 | 6.48888889e-005 | | |
| 18 | | | | | 37.0251470690098 | 5.84000000e-005 | | |
| 19 | | | | | 39.5136289617746 | 6.42400000e-005 | | |
| 20 | | | | | 39.5136289617746 | 5.84000000e-005 | | |
| 21 | | | | | 43.4276814770019 | 6.37090909e-005 | | |
| 22 | | | | | 43.4276814770019 | 5.84000000e-005 | | |
| 23 | | | | | 45.7543185835565 | 6.32666667e-005 | | |
| 24 | | | | | 45.7543185835565 | 5.84000000e-005 | | |
| 25 | | | | | 48.75869025 | 0.871351350823 | | |
| 26 | | | | | 48.75869025 | 0.809111970719 3 | | |
| 27 | | | | | 49.0280485980048 | 0.809116142147 8 | | |
| 28 | | | | | 49.0280485980048 | 0.755175056004 7 | | |
| 29 | | | | | 52.6817913603 9 | 0.755178959338 | | |
| 30 | | | | | 52.6817913603 9 | 0.707980274379 4 | | |
| 31 | | | | | 53.9518937380 48 | 0.707980924379 4 | | |
| 32 | | | | | 53.9518937380 48 | 0.658037811180 6 | | |
| 33 | | | | | 55.1763081105 74 | 0.658341246474 7 | | |
| 34 | | | | | 55.1763081105 74 | 0.629322288327 2 | | |
| 35 | | | | | 55.8956527950 32 | 0.629325532781 7 | | |

Run 0, Data Delay within the 4th LAN

Extend

File Edit Library Model Text Define Run Window Help

[2447] Bitung Main Naval Base LAN




Run 0, The 5th LAN

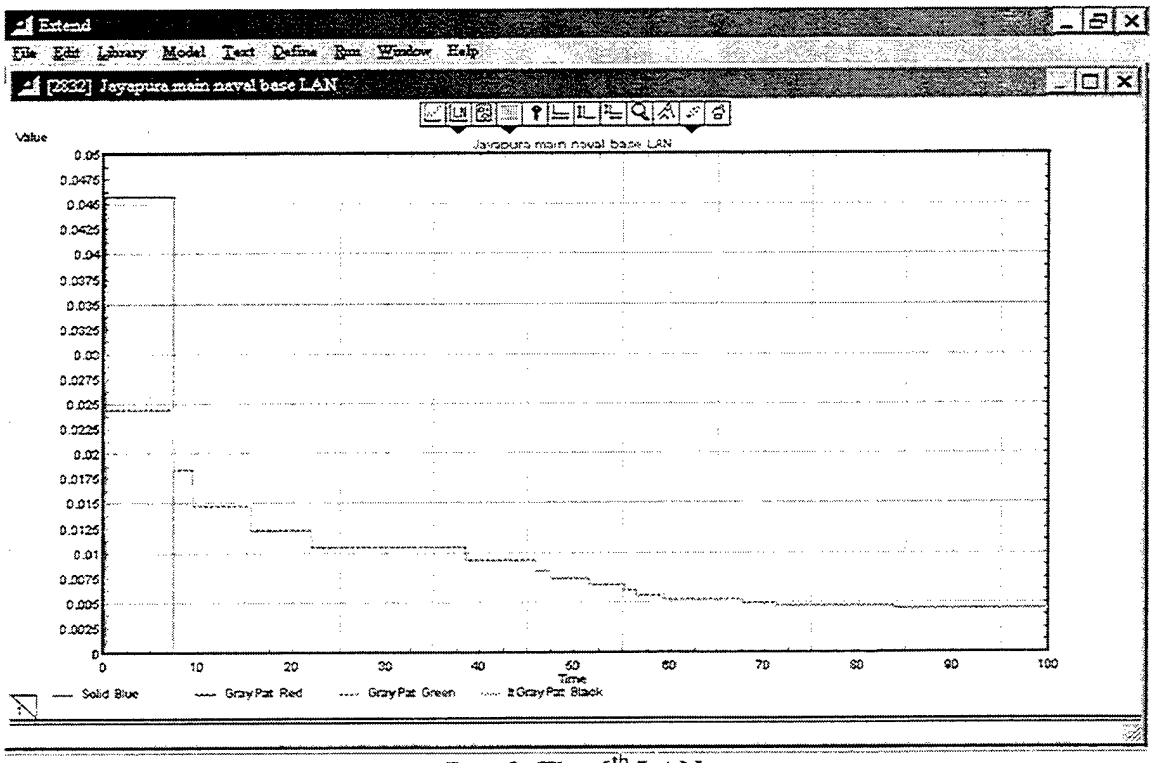
Extend

File Edit Library Model Text Define Run Window Help

[2447] Bitung Main Naval Base LAN

| Point Number | Time 1 | Solid Bl... 2 | Time 2 | GrayPat ... 3 | Time 3 | GrayPat ... 4 | Time 4 | ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 3.2794873782353 | 4.66000000e-005 | | | 3.2794873782353 | 4.66000000e-005 | | |
| 1 | 15.217222985909 | 4.66000000e-005 | | | 6.872599751082 | 9.32000000e-005 | | |
| 2 | 20.527361774974 | 4.66000000e-005 | | | 6.872599751082 | 4.66000000e-005 | | |
| 3 | 32.560534884299 | 4.66000000e-005 | | | 15.217222985909 | 5.99000000e-005 | | |
| 4 | 69.726736383541 | 4.66000000e-005 | | | 15.217222985909 | 4.66000000e-005 | | |
| 5 | 100 | 4.66000000e-005 | | | 20.527361774974 | 5.21333333e-005 | | |
| 6 | | | | | 20.527361774974 | 4.66000000e-005 | | |
| 7 | | | | | 24.708544714161 | 5.82500000e-005 | | |
| 8 | | | | | 24.708544714161 | 4.66000000e-005 | | |
| 9 | | | | | 32.560534884299 | 5.59200000e-005 | | |
| 10 | | | | | 32.560534884299 | 4.66000000e-005 | | |
| 11 | | | | | 39.879379320757 | 5.43666667e-005 | | |
| 12 | | | | | 39.879379320757 | 4.66000000e-005 | | |
| 13 | | | | | 47.477306184686 | 5.32571429e-005 | | |
| 14 | | | | | 47.477306184686 | 4.66000000e-005 | | |
| 15 | | | | | 48.254689850254 | 5.24250000e-005 | | |
| 16 | | | | | 48.254689850254 | 4.66000000e-005 | | |
| 17 | | | | | 54.098410366473 | 5.17777778e-005 | | |
| 18 | | | | | 54.098410366473 | 4.66000000e-005 | | |
| 19 | | | | | 57.878772514768 | 5.12500000e-005 | | |
| 20 | | | | | 57.878772514768 | 4.66000000e-005 | | |
| 21 | | | | | 58.765436894046 | 5.08363636e-005 | | |
| 22 | | | | | 58.765436894046 | 4.66000000e-005 | | |
| 23 | | | | | 69.726736383541 | 5.04833333e-005 | | |
| 24 | | | | | 69.726736383541 | 4.66000000e-005 | | |
| 25 | | | | | 69.864174336174 | 5.01946154e-005 | | |
| 26 | | | | | 69.864174336174 | 4.66000000e-005 | | |
| 27 | | | | | 78.143812371603 | 4.99285714e-005 | | |
| 28 | | | | | 78.143812371603 | 4.66000000e-005 | | |
| 29 | | | | | 90.234292301982 | 4.97066667e-005 | | |
| 30 | | | | | 90.234292301982 | 4.66000000e-005 | | |
| 31 | | | | | 100 | 4.66000000e-005 | | |

Run 0, Data Delay within the 5th LAN




Run 0, The 6th LAN

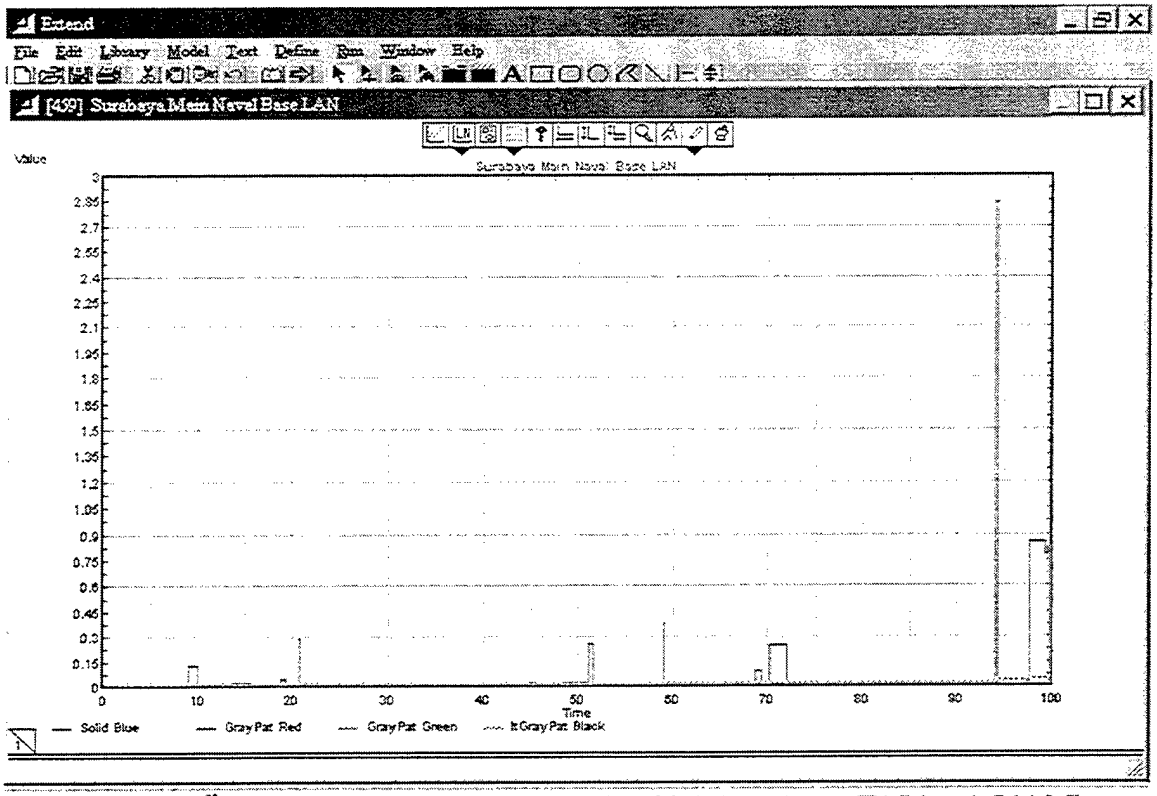
Extend

File Edit Library Model Text Define Run Window Help

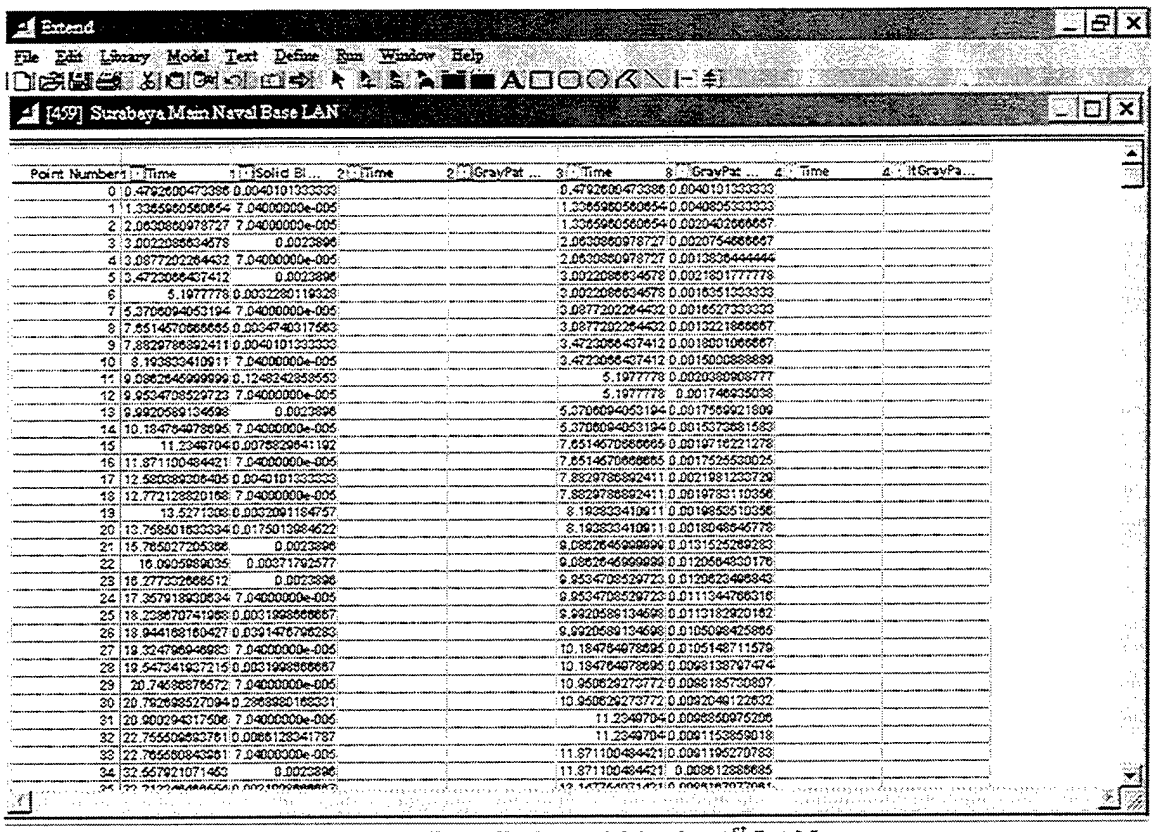
[2832] Jayapura main naval base LAN

| Point Number | 0 : Time | 1 : Solid S:... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : GravPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 4.66000000e-005 | 4.66000000e-005 | | | 4.66000000e-005 | 4.66000000e-005 | | |
| 1 | 0.0272571 | 0.0272571 | | | 0.0272571 | 0.0273037 | | |
| 2 | 0.0467418 | 0.0467418 | | | 0.0272571 | 0.01365185 | | |
| 3 | 7.514627989049 | 4.66000000e-005 | | | 0.0467418 | 0.03552275 | | |
| 4 | 9.600220325364 | 4.66000000e-005 | | | 0.0467418 | 0.0240485 | | |
| 5 | 21.98826480965 6 | 4.66000000e-005 | | | 7.514627989049 | 0.024364033333 | | |
| 6 | 38.61109541126 3 | 4.66000000e-005 | | | 7.514627989049 | 0.018273025 | | |
| 7 | 67.71066818474 8 | 4.66000000e-005 | | | 9.600220325364 | 0.018284675 | | |
| 8 | 100 | 4.66000000e-005 | | | 9.600220325364 | 0.01462774 | | |
| 9 | | | | | 15.55943306871 7 | 0.01463706 | | |
| 10 | | | | | 15.55943306871 7 | 0.01219755 | | |
| 11 | | | | | 21.98826480965 6 | 0.012205316665 7 | | |
| 12 | | | | | 21.98826480965 6 | 0.0104617 | | |
| 13 | | | | | 38.61109541126 3 | 0.010468357142 9 | | |
| 14 | | | | | 38.61109541126 3 | 0.0091598125 | | |
| 15 | | | | | 46.00834615292 7 | 0.0091556375 | | |
| 16 | | | | | 46.00834615292 7 | 0.0081472333333 | | |
| 17 | | | | | 47.83062827097 3 | 0.0081524111111 | | |
| 18 | | | | | 47.83062827097 3 | 0.00733717 | | |
| 19 | | | | | 51.66463420346 | 0.00734183 | | |
| 20 | | | | | 51.66463420346 | 0.006674339091 | | |
| 21 | | | | | 55.28281960751 7 | 0.006679827272 7 | | |
| 22 | | | | | 55.28281960751 7 | 0.006122075 | | |
| 23 | | | | | 58.55917256952 7 | 0.006125958333 3 | | |
| 24 | | | | | 58.55917256952 7 | 0.005654730769 2 | | |
| 25 | | | | | 59.22227635820 4 | 0.005658315384 6 | | |
| 26 | | | | | 59.22227635820 4 | 0.005254415 | | |
| 27 | | | | | 67.71066818474 8 | 0.005257478571 4 | | |
| 28 | | | | | 67.71066818474 8 | 0.00490693 | | |
| 29 | | | | | 71.41316272764 6 | 0.004910066667 | | |
| 30 | | | | | 71.41316272764 6 | 0.00460320625 | | |
| 31 | | | | | 83.90227591032 9 | 0.00460611875 | | |
| 32 | | | | | 83.90227591032 9 | 0.004335170588 2 | | |
| 33 | | | | | 100 | 0.004335170588 2 | | |

Run 0, Data Delay within the 6th LAN




Run 1, The 1st LAN, Using Simulation Set Up 100, Mean 1 sec, T1 Line 1.544 Mbps




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.479260047338 | 0.0040101333333 | | | 0.479260047338 | 0.0040101333333 | | |
| 1 | 1.336595056065 | 7.04000000e-005 | | | 1.336595056065 | 0.0040805333333 | | |
| 2 | 2.063086097872 | 7.04000000e-005 | | | 1.336595056065 | 0.0020402666667 | | |
| 3 | 3.002208663467 | 0.0023896 | | | 2.063086097872 | 0.0020754666667 | | |
| 4 | 3.087720226443 | 7.04000000e-005 | | | 2.063086097872 | 0.0013806444444 | | |
| 5 | 3.472206643741 | 0.0023896 | | | 3.002208663467 | 0.0021801777778 | | |
| 6 | 5.1977778 | 0.0032280119328 | | | 3.002208663467 | 0.0016351333333 | | |
| 7 | 5.370609405319 | 7.04000000e-005 | | | 3.087720226443 | 0.0016527333333 | | |
| 8 | 7.651467066665 | 0.0034740317563 | | | 3.087720226443 | 0.0013221866667 | | |
| 9 | 7.882978689241 | 0.0040101333333 | | | 3.472206643741 | 0.0018001066667 | | |
| 10 | 8.193833410911 | 7.04000000e-005 | | | 3.472206643741 | 0.0015000888889 | | |
| 11 | 9.086264999999 | 0.12482428358553 | | | 5.1977778 | 0.0020380908777 | | |
| 12 | 9.953470852972 | 7.04000000e-005 | | | 5.1977778 | 0.0017469335038 | | |
| 13 | 9.992058913469 | 0.0023896 | | | 5.370609405319 | 0.0017569921809 | | |
| 14 | 10.18476497869 | 7.04000000e-005 | | | 5.370609405319 | 0.0015373681583 | | |
| 15 | 11.2349704 | 0.0078829641192 | | | 7.651467066665 | 0.0019716221278 | | |
| 16 | 11.87110048442 | 7.04000000e-005 | | | 7.651467066665 | 0.0017525530025 | | |
| 17 | 12.58038930640 | 0.0040101333333 | | | 7.882978689241 | 0.0021981233729 | | |
| 18 | 12.77212882016 | 7.04000000e-005 | | | 7.882978689241 | 0.0019783110356 | | |
| 19 | 13.5271338 | 0.0032091184757 | | | 8.193833410911 | 0.0019850510356 | | |
| 20 | 13.76850163333 | 0.0175013984622 | | | 8.193833410911 | 0.0018048646778 | | |
| 21 | 15.76502720539 | 0.0023896 | | | 9.086264999999 | 0.0131525289283 | | |
| 22 | 16.09059890035 | 0.0037179257 | | | 9.086264999999 | 0.0120564830176 | | |
| 23 | 16.27730266512 | 0.0023896 | | | 9.953470852972 | 0.0120623496843 | | |
| 24 | 17.35791893064 | 7.04000000e-005 | | | 9.953470852972 | 0.0111344766316 | | |
| 25 | 18.23867074195 | 0.0031998866667 | | | 9.992058913469 | 0.0111182920162 | | |
| 26 | 18.94418816042 | 0.0091476796283 | | | 9.992058913469 | 0.0105098425865 | | |
| 27 | 19.32479694693 | 7.04000000e-005 | | | 10.18476497869 | 0.0105148711579 | | |
| 28 | 19.54734192721 | 0.0031998866667 | | | 10.18476497869 | 0.0096138797474 | | |
| 29 | 20.74636876572 | 7.04000000e-005 | | | 10.95062927377 | 0.0098185730807 | | |
| 30 | 20.79269527094 | 0.2963980168331 | | | 10.95062927377 | 0.0092049122632 | | |
| 31 | 20.90029431750 | 7.04000000e-005 | | | 11.2349704 | 0.0098850975206 | | |
| 32 | 22.75550683761 | 0.0086128341787 | | | 11.2349704 | 0.0091153859018 | | |
| 33 | 22.75550683261 | 7.04000000e-005 | | | 11.87110048442 | 0.0091195270783 | | |
| 34 | 32.55792107146 | 0.0023896 | | | 11.87110048442 | 0.0086128385685 | | |

Run 1, Data Delay within the 1st LAN

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

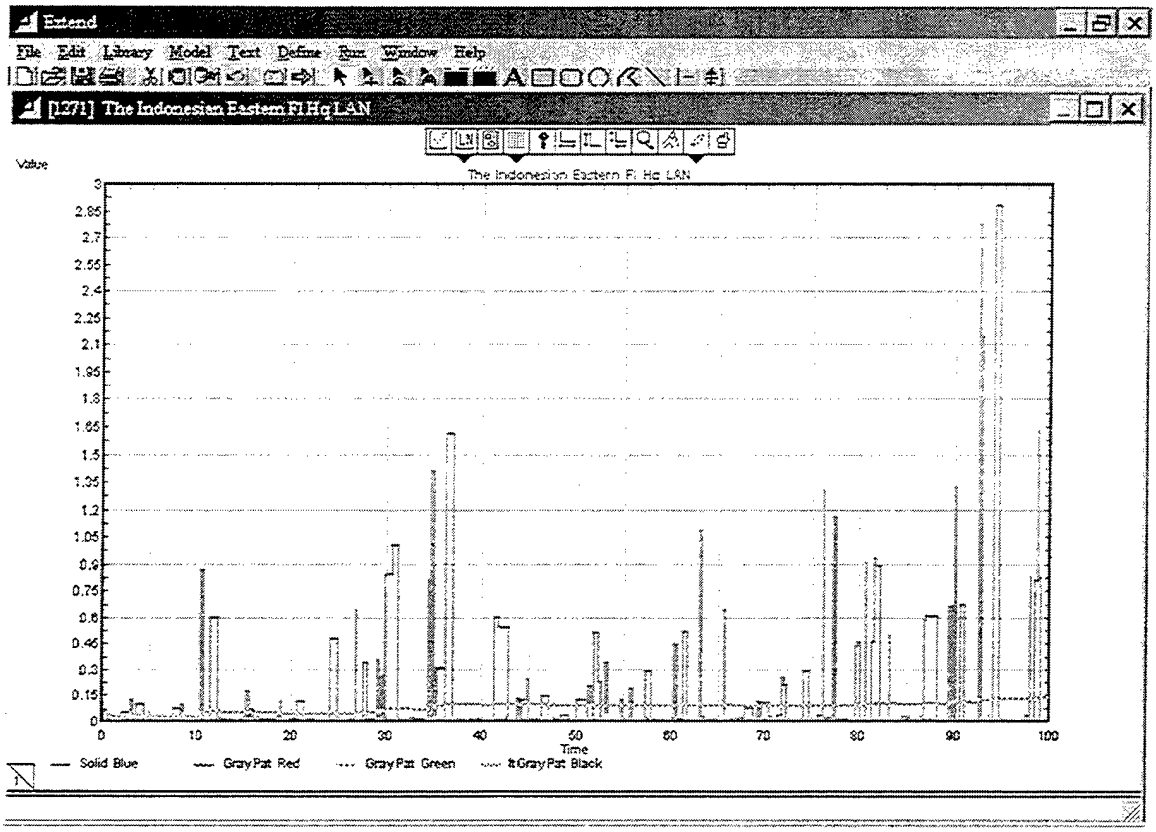
| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 GravPa... |
|---|---|---|---|---|---|---|---|---|
| 35 | 33.21334646554 | 0.0031998666667 | | | 12.147754071421 | 0.008167977951 | | |
| 36 | 35.563891157793 | 7.04000000e-005 | | | 12.147754071421 | 0.008163282227 | | |
| 37 | 36.108202235125 | 0.0031998666667 | | | 12.580389306405 | 0.008374347718 | | |
| 38 | 38.278944089032 | 7.04000000e-005 | | | 12.580389306405 | 0.007955624683 | | |
| 39 | 38.895095469739 | 0.0031998666667 | | | 12.772128820158 | 0.007591446832 | | |
| 40 | 40.237685771677 | 0.0023896 | | | 12.772128820158 | 0.007580137793 | | |
| 41 | 40.790511200424 | 7.04000000e-005 | | | 12.796199528285 | 0.007583490174 | | |
| 42 | 41.797780534432 | 0.0031998666667 | | | 12.795199528285 | 0.007238736075 | | |
| 43 | 44.780511020937 | 7.04000000e-005 | | | 13.424619801449 | 0.007241986075 | | |
| 44 | 44.975799593762 | 0.013565229911 | | | 13.424619801449 | 0.006927117115 | | |
| 45 | 46.660767792762 | 0.004775863717 | | | 13.5271308 | 0.007066440061 | | |
| 46 | 46.904637279341 | 7.04000000e-005 | | | 13.5271308 | 0.006772205058 | | |
| 47 | 46.935599484158 | 0.0031998666667 | | | 13.758501533204 | 0.007501425441 3 | | |
| 48 | 46.838806150824 | 0.004438687081 | | | 13.758501533204 | 0.007201368420 7 | | |
| 49 | 48.794424227938 | 7.04000000e-005 | | | 15.765027205066 | 0.007298952423 7 | | |
| 50 | 48.414655630797 | 0.014159420478 1 | | | 15.765027205066 | 0.007016300467 4 | | |
| 51 | 51.197149714281 | 0.248744762465 | | | 16.0905989035 | 0.007159297562 4 | | |
| 52 | 51.820715973633 | 0.004010333333 | | | 16.0905989035 | 0.006994138283 8 | | |
| 53 | 51.681824293659 | 7.04000000e-005 | | | 16.277932665512 | 0.006882642387 5 | | |
| 54 | 53.108758053113 | 0.0031998666667 | | | 16.277932665512 | 0.006732620128 | | |
| 55 | 53.522132007625 | 7.04000000e-005 | | | 16.806728771135 | 0.006818604870 1 | | |
| 56 | 55.557350447615 | 0.002965732756 | | | 16.806728771135 | 0.006580480564 2 | | |
| 57 | 56.389364156091 | 7.04000000e-005 | | | 17.357918930634 | 0.006585908150 4 | | |
| 58 | 59.007469280948 | 0.372685023061 | | | 17.357918930634 | 0.006365377878 7 | | |
| 59 | 59.137706114281 | 0.004140978037 | | | 17.4688771215 | 0.006368724066 4 | | |
| 60 | 59.221854150705 | 7.04000000e-005 | | | 17.4688771215 | 0.006162281818 1 | | |
| 61 | 60.932592600098 | 0.004010333333 | | | 17.537349569902 | 0.006165552785 9 | | |
| 62 | 62.440440572817 | 7.04000000e-005 | | | 17.537349569902 | 0.006972879261 3 | | |
| 63 | 64.423147053444 | 0.0023896 | | | 18.238670741968 | 0.006072875094 6 | | |
| 64 | 64.840135059175 | 7.04000000e-005 | | | 18.238670741968 | 0.006588348575 6 | | |
| 65 | 66.532002755607 | 0.004010333333 | | | 18.944158160427 | 0.007075141898 7 | | |
| 66 | 67.12627174865 | 0.0023896 | | | 18.944158160427 | 0.006867046489 9 | | |
| 67 | 68.151691865195 | 7.04000000e-005 | | | 19.324796946983 | 0.006869120078 1 | | |
| 68 | 68.753368181259 | 0.0858202530148 | | | 19.324796946983 | 0.006872859504 6 | | |
| 69 | 69.293735289034 | 7.04000000e-005 | | | 19.547341937215 | 0.006764284265 4 | | |

Extend

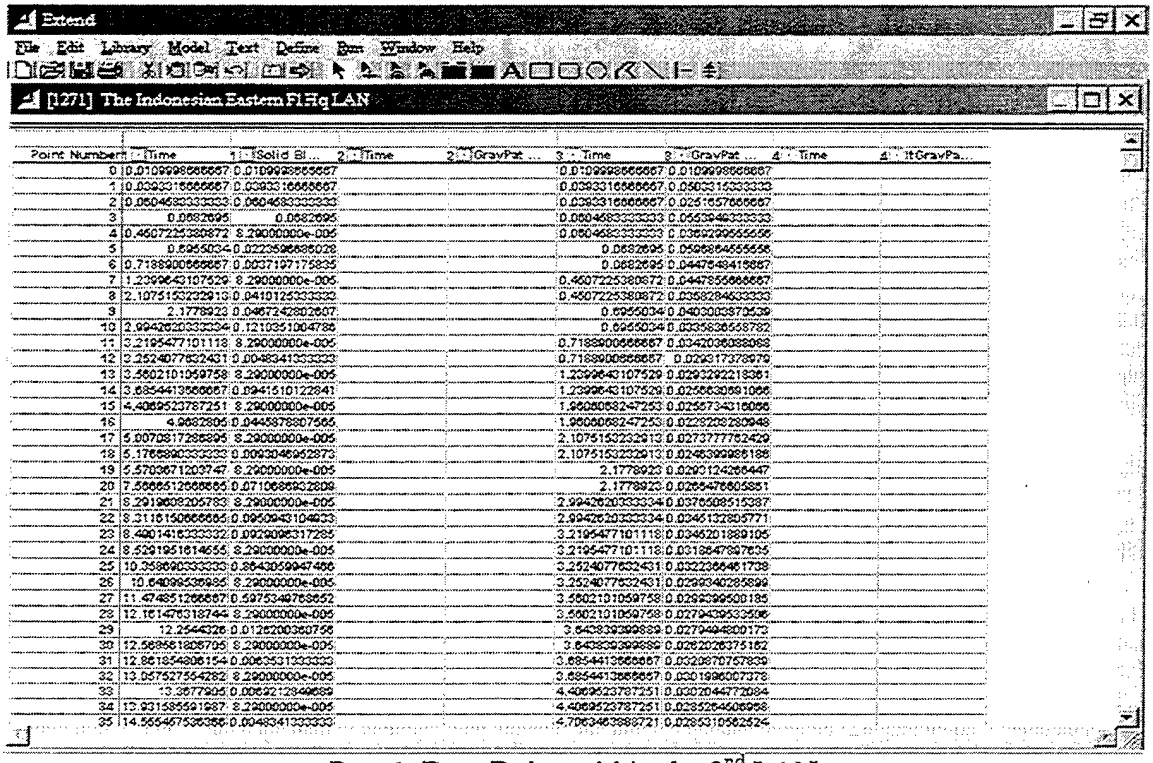
File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 GravPa... |
|---|---|---|---|---|---|---|---|---|
| 70 | 70.201633747926 | 0.2469754297156 | | | 19.547341937215 | 0.006576387481 2 | | |
| 71 | 71.996614085921 | 7.04000000e-005 | | | 20.113171953772 | 0.006665272564 | | |
| 72 | 73.005048186625 | 0.004010333333 | | | 20.113171953772 | 0.006485130161 9 | | |
| 73 | 74.757112577468 | 7.04000000e-005 | | | 20.746868875572 | 0.006487032864 6 | | |
| 74 | 75.912397313602 | 0.0023896 | | | 20.746868875572 | 0.006316321473 4 | | |
| 75 | 77.778507947929 | 0.005319810601 9 | | | 20.792598527094 | 0.013866259284 8 | | |
| 76 | 78.640425955544 | 7.04000000e-005 | | | 20.792598527094 | 0.013510723918 5 | | |
| 77 | 80.683908460618 | 0.0023896 | | | 20.900294317506 | 0.013512529046 7 | | |
| 78 | 80.787883475797 | 0.0031998666667 | | | 20.900294317506 | 0.013174715820 6 | | |
| 79 | 81.445493281679 | 0.004010333333 | | | 21.880142897911 | 0.013175475820 6 | | |
| 80 | 82.063370314698 | 0.011946498667 | | | 21.880142897911 | 0.012855098361 5 | | |
| 81 | 82.10603469504 | 0.0023896 | | | 22.400583388928 | 0.012856815434 7 | | |
| 82 | 83.155946279637 | 7.04000000e-005 | | | 22.400583388928 | 0.012550700781 5 | | |
| 83 | 87.185563705564 | 0.0031998666667 | | | 22.755509893761 | 0.012708149214 3 | | |
| 84 | 88.238024813222 | 0.0023896 | | | 22.755509893761 | 0.012412610860 5 | | |
| 85 | 88.308324547633 | 0.005844493204 8 | | | 22.765560843961 | 0.012414248069 8 | | |
| 86 | 88.403561071026 | 7.04000000e-005 | | | 22.765560843961 | 0.012132106068 2 | | |
| 87 | 91.471358212612 | 0.0023896 | | | 23.795029074028 | 0.012133706068 2 | | |
| 88 | 91.849992577833 | 7.04000000e-005 | | | 23.795029074028 | 0.011864068155 6 | | |
| 89 | 94.117496314602 | 2.837707239284 6 | | | 25.472407038418 | 0.011865632 6 | | |
| 90 | 94.248724314602 | 0.005950077484 6 | | | 25.472407038418 | 0.011607884065 3 | | |
| 91 | 95.007790514602 | 0.007855921685 3 | | | 25.488770508604 | 0.011609214 5 | | |
| 92 | 95.063444807983 | 0.004010333333 | | | 25.488770508604 | 0.011362209935 2 | | |
| 93 | 95.334949190499 | 7.04000000e-005 | | | 27.862177623681 | 0.011363707808 5 | | |
| 94 | 95.360527257941 | 0.0023896 | | | 27.862177623681 | 0.011125953895 9 | | |
| 95 | 97.772806847937 | 0.850714706065 7 | | | 31.156656910214 | 0.011129430562 5 | | |
| 96 | 99.257083047937 | 0.783589394 65 | | | 31.156656910214 | 0.010901319734 7 | | |
| 97 | 99.603369647937 | 0.812582177846 | | | 32.557921071463 | 0.010950087081 7 | | |
| 98 | 99.851378628762 | 7.04000000e-005 | | | 32.557921071463 | 0.010731095304 | | |
| 99 | 100 | 7.04000000e-005 | | | 33.213346465554 | 0.010795082673 4 | | |
| 100 | | | | | 33.213346465554 | 0.010583414385 7 | | |
| 101 | | | | | 35.563891157793 | 0.010584794777 8 | | |
| 102 | | | | | 35.563891157793 | 0.010361241192 1 | | |
| 103 | | | | | 36.108202235125 | 0.010446276929 5 | | |
| 104 | | | | | 36.108202235125 | 0.010246740402 5 | | |




Run 1, The 2nd LAN, Using Simulation Set Up 100, Mean 1 sec, T1 Line 1.544 Mbps




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.0109998666667 | 0.0109998666667 | | | 0.0109998666667 | 0.0109998666667 | | |
| 1 | 0.0393316666667 | 0.0393316666667 | | | 0.0393316666667 | 0.0503316333333 | | |
| 2 | 0.0604683333333 | 0.0604683333333 | | | 0.0393316666667 | 0.0516516666667 | | |
| 3 | 0.0682695 | 0.0682695 | | | 0.0604683333333 | 0.0563463333333 | | |
| 4 | 0.4607225380672 | 8.29000000e-005 | | | 0.0604683333333 | 0.0592299555556 | | |
| 5 | 0.6955034 | 0.0223596686028 | | | 0.0682695 | 0.0596884555556 | | |
| 6 | 0.7188900666667 | 0.0037197175835 | | | 0.0682695 | 0.0447543416667 | | |
| 7 | 1.239964310752 9 | 8.29000000e-005 | | | 0.4607225380672 | 0.0447855666667 | | |
| 8 | 2.1075153232913 | 0.0410125333333 | | | 0.4607225380672 | 0.0358284633333 | | |
| 9 | 2.1778923 | 0.0467242802607 | | | 0.6955034 | 0.0403003875539 | | |
| 10 | 2.9942620333334 | 0.121035104786 | | | 0.6955034 | 0.0335836558782 | | |
| 11 | 3.2195477101118 | 8.29000000e-005 | | | 0.7188900666667 | 0.0342036338663 | | |
| 12 | 3.2524077632431 | 0.00493413333333 | | | 0.7188900666667 | 0.0269173789979 | | |
| 13 | 3.5602101059758 | 8.29000000e-005 | | | 1.239964310752 9 | 0.0293292218361 | | |
| 14 | 3.6854413666667 | 0.0941510122841 | | | 1.239964310752 9 | 0.0256630691066 | | |
| 15 | 4.4069523787251 | 8.29000000e-005 | | | 1.960806824725 3 | 0.0256734316066 | | |
| 16 | 4.9682805 | 0.0445878807565 | | | 1.960806824725 3 | 0.0228208280948 | | |
| 17 | 5.0070817286895 | 8.29000000e-005 | | | 2.1075153232913 | 0.0273777752429 | | |
| 18 | 5.1766890333333 | 0.00920496528973 | | | 2.1075153232913 | 0.0246399986188 | | |
| 19 | 5.5703671203747 | 8.29000000e-005 | | | 2.1778923 | 0.0290124266447 | | |
| 20 | 7.5666512666665 | 0.0710665932809 | | | 2.1778923 | 0.0265476605851 | | |
| 21 | 8.2919608205783 | 8.29000000e-005 | | | 2.9942620333334 | 0.0376508515387 | | |
| 22 | 8.3115150666665 | 0.0950943104633 | | | 2.9942620333334 | 0.0345132805771 | | |
| 23 | 8.4001416333332 | 0.0929096317285 | | | 3.2195477101118 | 0.0345201889105 | | |
| 24 | 8.5291951614655 | 8.29000000e-005 | | | 3.2195477101118 | 0.0318647897635 | | |
| 25 | 10.3586903333333 | 0.864305994746 6 | | | 3.2524077632431 | 0.0322366461738 | | |
| 26 | 10.6409953596 6 | 8.29000000e-005 | | | 3.2524077632431 | 0.0299340285899 | | |
| 27 | 11.4748512666667 | 0.597534976365 2 | | | 3.5602101059758 | 0.0299399500185 | | |
| 28 | 12.1614763187444 | 8.29000000e-005 | | | 3.5602101059758 | 0.0279429532506 | | |
| 29 | 12.2544326 | 0.0126200360756 | | | 3.6438393999889 | 0.0279494800173 | | |
| 30 | 12.5695618286705 | 8.29000000e-005 | | | 3.6438393999889 | 0.0262026375162 | | |
| 31 | 12.8618548061154 | 0.00635313333333 | | | 3.6854413666667 | 0.0320870757839 | | |
| 32 | 13.0575275564282 | 8.29000000e-005 | | | 3.6854413666667 | 0.0301996007378 | | |
| 33 | 13.3677905 | 0.00692129496889 | | | 4.4069523787251 | 0.0302044772084 | | |
| 34 | 13.9315855991987 | 8.29000000e-005 | | | 4.4069523787251 | 0.0285264606958 | | |
| 35 | 14.5554675363356 | 0.00493413333333 | | | 4.7063463888721 | 0.0285310562524 | | |

Run 1, Data Delay within the 2nd LAN

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 36 | 14.862228158632 | 8.29000000e-005 | | | 4.7060463888721 | 0.027029421712 | | |
| 37 | 15.170671203034 | 0.158440220159 | | | 4.9682805 | 0.029375152278 | | |
| 38 | 15.503479833334 | 0.010403216680 | | | 4.9682805 | 0.027907344665 | | |
| 39 | 15.7742379 | 0.054565040119 | | | 5.0070817285895 | 0.027911489655 | | |
| 40 | 16.025199892287 | 0.007961856667 | | | 5.0070817285895 | 0.026592071109 | | |
| 41 | 16.12129021342 | 8.29000000e-005 | | | 5.1080390054782 | 0.026565167285 | | |
| 42 | 16.498054492766 | 0.023577421649 | | | 5.1080390054782 | 0.025377849654 | | |
| 43 | 16.644659659435 | 0.005713486099 | | | 5.1766890333333 | 0.025800790303 | | |
| 44 | 18.4227865369 | 8.29000000e-005 | | | 5.1766890333333 | 0.024579018951 | | |
| 45 | 18.529797227093 | 0.046487505758 | | | 5.5700671203747 | 0.024482621242 | | |
| 46 | 18.833093271943 | 8.29000000e-005 | | | 5.5700671203747 | 0.023554178591 | | |
| 47 | 18.940669027801 | 0.004834133333 | | | 6.0647042259744 | 0.023557632057 | | |
| 48 | 18.99325039376 | 0.112937566564 | | | 6.0647042259744 | 0.022711327543 | | |
| 49 | 18.981861282054 | 8.29000000e-005 | | | 6.6379521395979 | 0.022714643543 | | |
| 50 | 19.985418087194 | 0.004834133333 | | | 6.6379521395979 | 0.021841003407 | | |
| 51 | 19.975447677976 | 0.006253133333 | | | 7.5665512666666 | 0.024574414887 | | |
| 52 | 20.231418460427 | 0.012155857623 | | | 7.5665512666666 | 0.023564251180 | | |
| 53 | 20.594468389376 | 0.115657925427 | | | 8.2919508205783 | 0.023587021560 | | |
| 54 | 21.487639079438 | 0.008253133333 | | | 8.2919508205783 | 0.022820603667 | | |
| 55 | 22.251242693761 | 0.000101451307 | | | 8.3115150566665 | 0.026218285441 | | |
| 56 | 22.410966205463 | 8.29000000e-005 | | | 8.3115150566665 | 0.025314206833 | | |
| 57 | 24.106516350428 | 0.476630443844 | | | 8.4901416333332 | 0.026517987037 | | |
| 58 | 24.931291281679 | 8.29000000e-005 | | | 8.4901416333332 | 0.027567387489 | | |
| 59 | 25.175997805766 | 0.004834133333 | | | 8.5291951514655 | 0.027570150803 | | |
| 60 | 25.412556460428 | 0.009997032514 | | | 8.5291951514655 | 0.026587910997 | | |
| 61 | 25.646989317467 | 8.29000000e-005 | | | 9.0353968519294 | 0.026663465243 | | |
| 62 | 25.890842260428 | 0.640955422387 | | | 9.0353968519294 | 0.025496070028 | | |
| 63 | 26.910663390771 | 8.29000000e-005 | | | 9.2088055345473 | 0.025852197527 | | |
| 64 | 27.397805493761 | 0.010147973758 | | | 9.2088055345473 | 0.025087975997 | | |
| 65 | 27.588229027095 | 0.341983294875 | | | 9.4623281455594 | 0.025071309820 | | |
| 66 | 27.991408893761 | 0.013738144763 | | | 9.4623281455594 | 0.024539183656 | | |
| 67 | 28.168393403951 | 0.004834133333 | | | 10.358690333333 | 0.049754829069 | | |
| 68 | 29.046229027095 | 0.359488992457 | | | 10.358690333333 | 0.048303120538 | | |
| 69 | 29.219463727095 | 8.30642569e-005 | | | 10.640995359935 | 0.048335491096 | | |
| 70 | 29.565192827095 | 0.268554876016 | | | 10.640995359935 | 0.046992835343 | | |
| 71 | 29.649982421346 | 8.29000000e-005 | | | 10.661976222292 | 0.048965139412 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 72 | 29.964114160428 | 0.840574280541 | | | 10.661976222292 | 0.046725005091 | | |
| 73 | 30.690815593762 | 1.00369856519 | | | 11.470694701954 | 0.045727241049 | | |
| 74 | 31.234146908761 | 0.006563133333 | | | 11.470694701954 | 0.044623992600 | | |
| 75 | 31.936914291276 | 8.29000000e-005 | | | 11.474851266667 | 0.060248497255 | | |
| 76 | 32.001418967359 | 0.006598754122 | | | 11.474851266667 | 0.058703663992 | | |
| 77 | 32.716637060428 | 0.013978583110 | | | 12.161476318744 | 0.058705789633 | | |
| 78 | 33.189446593762 | 0.015915790795 | | | 12.161476318744 | 0.057238144892 | | |
| 79 | 33.891871922618 | 8.29000000e-005 | | | 12.2544326 | 0.057555645794 | | |
| 80 | 34.456935593762 | 0.812466323219 | | | 12.2544326 | 0.056149898308 | | |
| 81 | 34.601940027095 | 8.29000000e-005 | | | 12.568561806705 | 0.056151920287 | | |
| 82 | 34.605227721335 | 0.007961856667 | | | 12.568561806705 | 0.054814969042 | | |
| 83 | 34.764709027095 | 1.40866565046822 | | | 12.849580623885 | 0.054816943613 | | |
| 84 | 34.975540335723 | 8.29000000e-005 | | | 12.849580623885 | 0.053542130371 | | |
| 85 | 35.263959027095 | 0.305418206560 | | | 12.861854806154 | 0.053689876259 | | |
| 86 | 35.150053460429 | 0.009253065284 | | | 12.861854806154 | 0.052496537525 | | |
| 87 | 35.236143262513 | 8.29000000e-005 | | | 13.057527554282 | 0.052471537843 | | |
| 88 | 35.271899060429 | 1.61134940130143 | | | 13.057527554282 | 0.051305036691 | | |
| 89 | 37.009615260429 | 0.008341063714 | | | 13.3677806 | 0.051469310018 | | |
| 90 | 38.154699811156 | 8.29000000e-005 | | | 13.3677806 | 0.050340629346 | | |
| 91 | 38.800004564655 | 0.004834133333 | | | 13.931585591987 | 0.050342431523 | | |
| 92 | 39.311264921195 | 8.29000000e-005 | | | 13.931585591987 | 0.049271315959 | | |
| 93 | 39.595909138794 | 0.012558583036 | | | 14.005851212597 | 0.049270079789 | | |
| 94 | 40.154843724404 | 8.29000000e-005 | | | 14.005851212597 | 0.048246557293 | | |
| 95 | 41.336863893762 | 0.596472748282 | | | 14.555467536366 | 0.048347268404 | | |
| 96 | 41.799000380429 | 0.543046854052 | | | 14.555467536366 | 0.047360589467 | | |
| 97 | 42.895364651093 | 8.29000000e-005 | | | 14.863223158632 | 0.047362281294 | | |
| 98 | 43.584820560429 | 0.003785055704 | | | 14.863223158632 | 0.046415035582 | | |
| 99 | 43.607432122431 | 0.003199856667 | | | 14.938062965628 | 0.046418693667 | | |
| 100 | 43.679392827095 | 0.126574862379 | | | 14.938062965628 | 0.045505524199 | | |
| 101 | 43.942366527095 | 0.018671167989 | | | 15.170671203334 | 0.048809312038 | | |
| 102 | 44.003442871417 | 8.29000000e-005 | | | 15.170671203334 | 0.047870671418 | | |
| 103 | 44.198118010121 | 0.004834133333 | | | 15.503479833334 | 0.048078629479 | | |
| 104 | 44.227402360429 | 0.118097659810 | | | 15.503479833334 | 0.047163825480 | | |
| 105 | 44.778406227095 | 0.240574151460 | | | 15.7742379 | 0.048382046515 | | |
| 106 | 44.924628933276 | 0.004010133333 | | | 15.7742379 | 0.047485027901 | | |
| 107 | 46.295517027095 | 0.006073706460 | | | 16.025199892287 | 0.047633524764 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 108 | 45.303315121759 | 0.007961866667 | | | 16.02519989287 | 0.0467674606787 | | |
| 109 | 46.368594560429 | 0.1432232027326 | | | 16.1212902134 2 | 0.0467689879615 | | |
| 110 | 47.04189253272 | 8.29000000e-005 | | | 16.1212902134 2 | 0.0469338078095 | | |
| 111 | 47.606020460429 | 0.0105024486672 | | | 16.49505449276 8 | 0.0463566189104 | | |
| 112 | 47.810462218016 | 8.29000000e-005 | | | 16.49505449276 8 | 0.0465433448944 | | |
| 113 | 48.049616927096 | 0.0088381082908 | | | 16.64455959435 | 0.0456426692119 | | |
| 114 | 48.212532276494 | 8.29000000e-005 | | | 16.64455959435 | 0.0448587093979 | | |
| 115 | 48.382282127096 | 0.0310861414601 | | | 18.4227865369 | 0.0448581387083 | | |
| 116 | 49.189906914281 | 0.0146929570178 | | | 18.4227865369 | 0.0440978312726 | | |
| 117 | 49.374452969056 | 8.29000000e-005 | | | 18.529797227093 | 0.0448857558794 | | |
| 118 | 49.741972314281 | 0.0098148773412 | | | 18.529797227093 | 0.0441376508475 | | |
| 119 | 49.808156955601 | 8.29000000e-005 | | | 18.833093271943 | 0.0441390425141 | | |
| 120 | 50.065295980048 | 0.1234602906729 | | | 18.833093271943 | 0.0434154616533 | | |
| 121 | 51.108469536177 | 8.29000000e-005 | | | 18.840969327801 | 0.0434946997407 | | |
| 122 | 51.281621580948 | 0.1998247686792 | | | 18.840969327801 | 0.0427931723255 | | |
| 123 | 51.503771714281 | 0.1080179005468 | | | 18.90325039376 | 0.0446147469716 | | |
| 124 | 51.583401580948 | 0.2025772669415 | | | 18.90325039376 | 0.0439066754006 | | |
| 125 | 51.662183114281 | 0.0882417798109 | | | 18.981861383354 | 0.0439078912726 | | |
| 126 | 51.744171504801 | 8.29000000e-005 | | | 18.981861383354 | 0.0432218304725 | | |
| 127 | 51.790680714281 | 0.0161135881951 | | | 19.57732935342 | 0.0432231257785 | | |
| 128 | 51.895580247615 | 0.5069119022591 | | | 19.57732935342 | 0.0425591546619 | | |
| 129 | 52.269341580948 | 0.2273465888288 | | | 19.643259093352 | 0.0425594300037 | | |
| 130 | 52.280383114281 | 0.2239993055546 | | | 19.643259093352 | 0.0419146901551 | | |
| 131 | 52.585505146639 | 8.29000000e-005 | | | 19.965418087194 | 0.0419876346996 | | |
| 132 | 52.963126047615 | 0.0065289269285 | | | 19.965418087194 | 0.0413611505011 | | |
| 133 | 53.141016380948 | 0.3403746278435 | | | 19.978447677976 | 0.0414659733866 | | |
| 134 | 53.424091814281 | 9.48259505e-005 | | | 19.978447677976 | 0.0408463267192 | | |
| 135 | 53.792846349426 | 0.0047444 | | | 20.231416460427 | 0.0410250893298 | | |
| 136 | 53.925685706892 | 8.29000000e-005 | | | 20.231416460427 | 0.0404305228176 | | |
| 137 | 54.680623114281 | 0.1199410591553 | | | 20.69446389376 | 0.0421067246356 | | |
| 138 | 54.867327364016 | 8.29000000e-005 | | | 20.69446389376 | 0.0415051999979 | | |
| 139 | 55.546082095653 | 0.0079618666667 | | | 21.487839079438 | 0.0415959590456 | | |
| 140 | 55.575574069729 | 8.29000000e-005 | | | 21.487839079438 | 0.0410101004674 | | |
| 141 | 55.632188247615 | 0.1878317064438 | | | 22.251242693761 | 0.0410115293591 | | |
| 142 | 55.956920303712 | 8.29000000e-005 | | | 22.251242693761 | 0.0404419247847 | | |
| 143 | 57.387816447615 | 0.2922920224345 | | | 22.410956205463 | 0.0404430761736 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 144 | 57.516949780948 | 0.2923665681135 | | | 22.410956205463 | 0.0398390614314 | | |
| 145 | 57.974024248353 | 0.0070767572036 | | | 22.419894431611 | 0.0398391970479 | | |
| 146 | 59.264664791378 | 8.29000000e-005 | | | 22.419894431611 | 0.0393511140331 | | |
| 147 | 60.201923114282 | 0.4456759347449 | | | 22.847065133718 | 0.0393522606013 | | |
| 148 | 60.407580536119 | 8.29000000e-005 | | | 22.847065133718 | 0.0388275637933 | | |
| 149 | 60.418443114282 | 0.4414747873671 | | | 23.984834917998 | 0.0388286591266 | | |
| 150 | 60.661592714282 | 0.0122014320929 | | | 23.984834917998 | 0.0383177655855 | | |
| 151 | 61.247339514282 | 0.5164730548004 | | | 24.105516360428 | 0.0446892187994 | | |
| 152 | 61.757531047615 | 0.0119846289949 | | | 24.105516360428 | 0.0440101380304 | | |
| 153 | 61.956074959923 | 8.29000000e-005 | | | 24.931291381679 | 0.0440112146538 | | |
| 154 | 62.452791404632 | 0.0074082260408 | | | 24.931291381679 | 0.0434489683121 | | |
| 155 | 62.500881535741 | 8.29000000e-005 | | | 25.733635531166 | 0.0434480311326 | | |
| 156 | 63.054826847615 | 1.0826602640211 | | | 25.733635531166 | 0.0428980560549 | | |
| 157 | 63.195520114282 | 0.0209395403453 | | | 25.770712507546 | 0.0428991054422 | | |
| 158 | 63.515260114282 | 0.0108727891308 | | | 25.770712507546 | 0.0423628568043 | | |
| 159 | 63.591077013936 | 0.0079618666667 | | | 26.176997805766 | 0.0424232932709 | | |
| 160 | 64.173726263508 | 8.29000000e-005 | | | 26.176997805766 | 0.0418995489095 | | |
| 161 | 64.331118447615 | 0.0056222093381 | | | 26.412556460428 | 0.0420022969062 | | |
| 162 | 64.956594398395 | 8.29000000e-005 | | | 26.412556460428 | 0.0415194938298 | | |
| 163 | 65.594628280949 | 0.6347787874026 | | | 26.546989317467 | 0.0415115048052 | | |
| 164 | 65.709228214282 | 0.2755073598766 | | | 26.546989317467 | 0.0410113661901 | | |
| 165 | 65.825778153318 | 8.29000000e-005 | | | 26.890842360428 | 0.0487337206797 | | |
| 166 | 66.211074714282 | 0.0111359835795 | | | 26.890842360428 | 0.0481535573382 | | |
| 167 | 66.407336767534 | 8.29000000e-005 | | | 26.910533907711 | 0.0481544544243 | | |
| 168 | 66.509944142833 | 0.0101211815822 | | | 26.910533907711 | 0.0475880201931 | | |
| 169 | 66.522846729587 | 0.0048341332223 | | | 27.271525991932 | 0.0475889954872 | | |
| 170 | 66.514714945418 | 8.29000000e-005 | | | 27.271525991932 | 0.0470056350746 | | |
| 171 | 66.930597047616 | 0.0135670252417 | | | 27.397805493761 | 0.0471536347694 | | |
| 172 | 67.351238885895 | 8.29000000e-005 | | | 27.397805493761 | 0.0465116389675 | | |
| 173 | 67.835870814592 | 0.0755263439461 | | | 27.588229027095 | 0.0505424812191 | | |
| 174 | 68.831288845355 | 8.29000000e-005 | | | 27.588229027095 | 0.0499631349404 | | |
| 175 | 69.187657847926 | 0.1138001863182 | | | 27.991408093761 | 0.0501242502218 | | |
| 176 | 69.384570963057 | 0.0100578460468 | | | 27.991408093761 | 0.0495610563991 | | |
| 177 | 69.659317247926 | 0.1072665174284 | | | 28.168393408951 | 0.0496153372504 | | |
| 178 | 70.479238314693 | 0.0202138859547 | | | 28.168393408951 | 0.0490640905873 | | |
| 179 | 70.718261110058 | 8.29000000e-005 | | | 29.046229027095 | 0.0530584125[illegible] | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

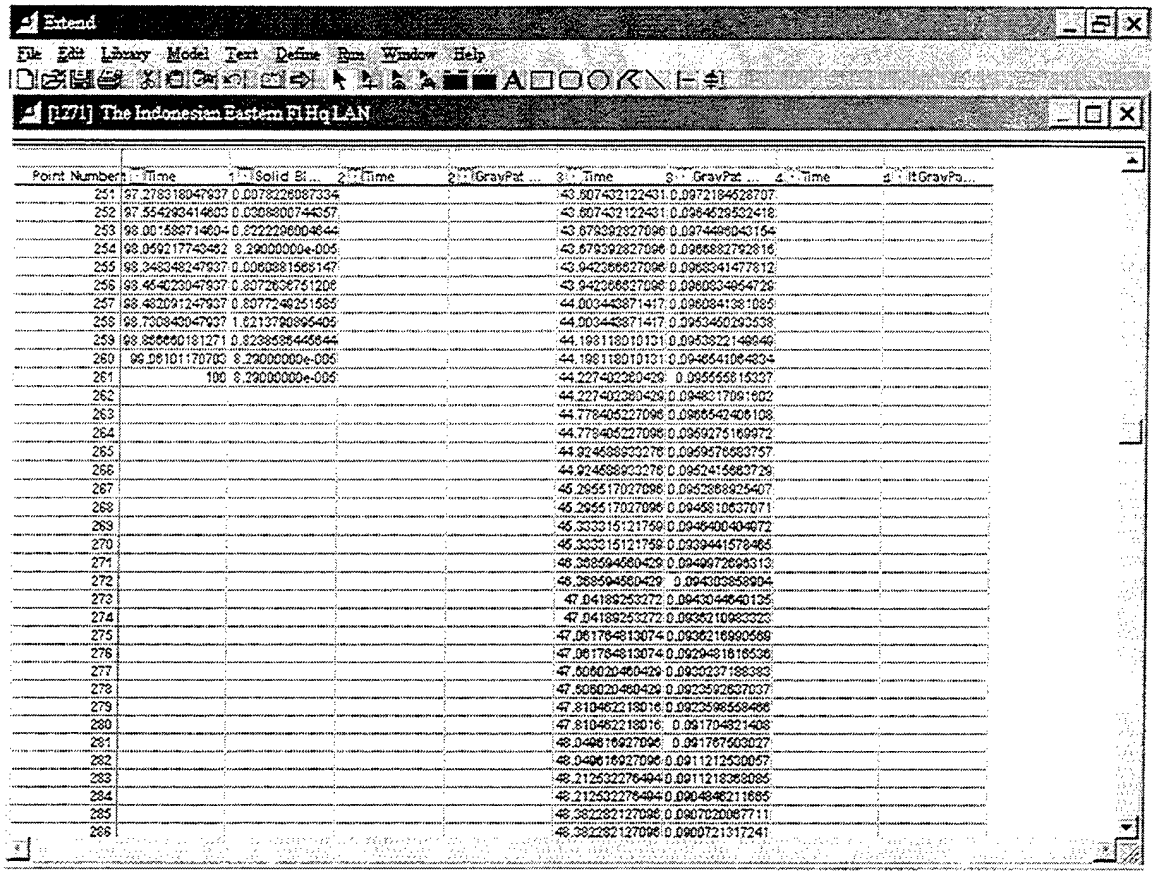
| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : GravPa... |
|---|---|---|---|---|---|---|---|---|
| 180 | 71.009775814693 | 0.0056370151935 | | | 29.046229027095 | 0.0524753502099 | | |
| 181 | 71.115860882724 | 8.29000000e-005 | | | 29.219463727095 | 0.0524752660041 | | |
| 182 | 71.099496247927 | 0.0060023460327 | | | 29.219463727095 | 0.0519058718084 | | |
| 183 | 71.8223979812 6 | 0.2472955872798 | | | 29.565192927095 | 0.0547182503955 | | |
| 184 | 72.0629297146 94 | 0.2066003514959 | | | 29.565192927095 | 0.0541279041117 | | |
| 185 | 72.299638416594 | 0.0105151918723 | | | 29.649952421346 | 0.0541287955095 | | |
| 186 | 72.551564546773 | 8.29000000e-005 | | | 29.649952421346 | 0.0535529572594 | | |
| 187 | 73.0528169340 16 | 0.0079618665557 | | | 29.864114160428 | 0.0524952358397 | | |
| 188 | 74.0870281812 51 | 0.2919622099628 | | | 29.864114160428 | 0.0518373922414 | | |
| 189 | 74.5077770502681 | 8.29000000e-005 | | | 30.590815693762 | 0.0724026402958 | | |
| 190 | 75.5847145479 28 | 0.0201356794829 | | | 30.590815693762 | 0.0716484461 28 | | |
| 191 | 76.158294847929 | 1.3029222376 59 | | | 31.234146908761 | 0.0717146245982 | | |
| 192 | 76.164973461986 | 8.29000000e-005 | | | 31.234146908761 | 0.0709752985714 | | |
| 193 | 76.572111947929 | 0.0135135026793 | | | 31.935914291276 | 0.0709761502105 | | |
| 194 | 76.593842820756 | 8.29000000e-005 | | | 31.935914291276 | 0.0702519067493 | | |
| 195 | 76.606606592222 | 0.0048341333333 | | | 31.957984607957 | 0.0702527526677 | | |
| 196 | 76.962655547929 | 0.0124624021885 | | | 31.957984607957 | 0.0695401289003 | | |
| 197 | 76.9094831057 13 | 8.29000000e-005 | | | 32.001418957359 | 0.0695097829554 | | |
| 198 | 77.270986847929 | 1.1578655707484 | | | 32.001418957359 | 0.0689138851555 | | |
| 199 | 77.487983714341 | 8.29000000e-005 | | | 32.715637060428 | 0.0689034709865 | | |
| 200 | 77.5893031514596 | 0.0109571587703 | | | 32.715637060428 | 0.0683697732541 | | |
| 201 | 77.89000315422 | 8.29000000e-005 | | | 33.189466593762 | 0.0683273553412 | | |
| 202 | 78.081999253411 | 0.0063531333333 | | | 33.189466593762 | 0.0678555185241 | | |
| 203 | 78.511851514596 | 0.0067230989905 | | | 33.891871822618 | 0.0678553312692 | | |
| 204 | 78.933455223811 | 8.29000000e-005 | | | 33.891871822618 | 0.0671975319355 | | |
| 205 | 79.555056381253 | 0.4355580462244 | | | 34.466935593762 | 0.0760854574047 | | |
| 206 | 79.841191247933 | 0.4607593941051 | | | 34.466935593762 | 0.0743504818527 | | |
| 207 | 80.037505602472 | 8.29000000e-005 | | | 34.601943027336 | 0.0743542789681 | | |
| 208 | 80.349590355824 | 0.0079618665557 | | | 34.601943027336 | 0.0736550477398 | | |
| 209 | 80.553900089157 | 0.0100762111601 | | | 34.506227791335 | 0.0737318750414 | | |
| 210 | 80.710703047933 | 0.9047320468523 | | | 34.506227791335 | 0.0730352913148 | | |
| 211 | 80.751406281118 | 8.29000000e-005 | | | 34.764709027095 | 0.0863255979616 | | |
| 212 | 81.340188181254 | 0.4642601955327 | | | 34.764709027095 | 0.0855188186722 | | |
| 213 | 81.597531914697 | 0.9304350884469 | | | 34.978540336723 | 0.0855195914386 | | |
| 214 | 81.748326847931 | 0.8992981315064 | | | 34.978540336723 | 0.0847277433897 | | |
| 215 | 82.137432487466 | 0.0048341333333 | | | 34.992799118237 | 0.0847285109623 | | |

Extend

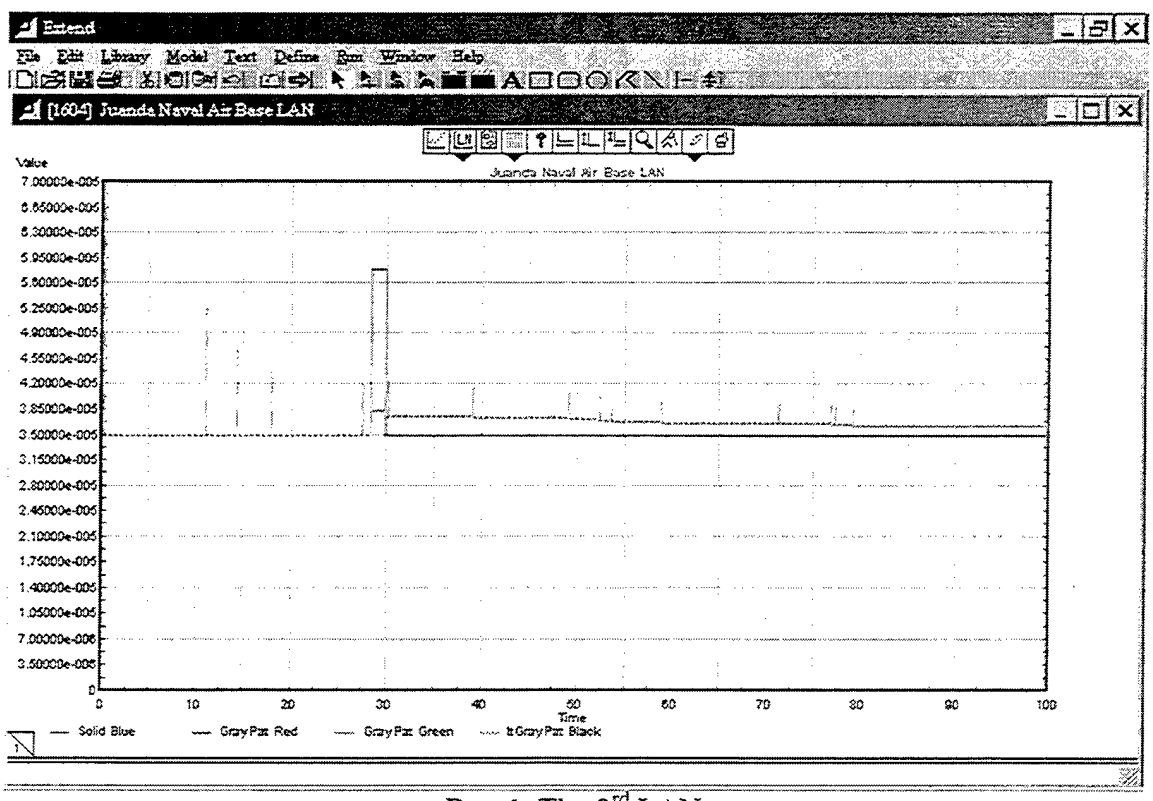
File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : GravPa... |
|---|---|---|---|---|---|---|---|---|
| 216 | 82.433625514992 | 8.29000000e-005 | | | 34.992799118237 | 0.0839511951737 | | |
| 217 | 83.263074847931 | 0.4927503242355 | | | 35.263969027095 | 0.0867524862797 | | |
| 218 | 83.273673981266 | 0.0075135785559 | | | 35.263969027095 | 0.0859638273135 | | |
| 219 | 83.351499588424 | 8.29000000e-005 | | | 35.150053460429 | 0.0860479391819 | | |
| 220 | 84.684272547932 | 0.0251799801101 | | | 35.150053460429 | 0.0852727325226 | | |
| 221 | 85.340016047932 | 0.9222038316578 | | | 35.235143062513 | 0.0852734793695 | | |
| 222 | 85.409919077527 | 8.29000000e-005 | | | 35.235143062513 | 0.0846121099018 | | |
| 223 | 85.559992114699 | 0.0047406555095 | | | 35.271899360429 | 0.0988991572409 | | |
| 224 | 85.331632252072 | 8.29000000e-005 | | | 35.271899360429 | 0.0980239340463 | | |
| 225 | 85.575624847933 | 0.0242223095965 | | | 37.009616260429 | 0.0980977581861 | | |
| 226 | 86.516961247933 | 0.0121315546227 | | | 37.009616260429 | 0.0972372515354 | | |
| 227 | 86.895974847933 | 0.5850037972403 | | | 38.154599811166 | 0.0972379787284 | | |
| 228 | 86.989016047933 | 0.6083869683641 | | | 38.154599811166 | 0.0963924310872 | | |
| 229 | 88.166682246329 | 8.29000000e-005 | | | 38.432276242859 | 0.0963931519568 | | |
| 230 | 89.397396381267 | 0.6663342558813 | | | 38.432276242859 | 0.0955621765089 | | |
| 231 | 89.539017881267 | 8.34463946e-005 | | | 38.800004664855 | 0.0955028503721 | | |
| 232 | 89.913504714601 | 0.6667532960417 | | | 38.800004664855 | 0.0947887231484 | | |
| 233 | 89.916236727952 | 8.29000000e-005 | | | 39.311264921195 | 0.0947874318954 | | |
| 234 | 89.957187581267 | 0.6511191477154 | | | 39.311264921195 | 0.0939841485376 | | |
| 235 | 89.962738047934 | 0.0179853415357 | | | 39.595909138794 | 0.0940905778897 | | |
| 236 | 89.978250914601 | 1.0178566692786 | | | 39.595909138794 | 0.0932399007746 | | |
| 237 | 90.208926512767 | 8.29000000e-005 | | | 40.154843734404 | 0.0933005974152 | | |
| 238 | 90.335130581267 | 0.0063321736152 | | | 40.154843734404 | 0.0925220924347 | | |
| 239 | 90.558858381267 | 0.6591658463341 | | | 40.287664199027 | 0.0925237832681 | | |
| 240 | 91.089918870187 | 8.29000000e-005 | | | 40.287664199027 | 0.0917591239022 | | |
| 241 | 92.546894847935 | 2.7713042283116 | | | 41.335853393752 | 0.0966888485362 | | |
| 242 | 92.651706847935 | 2.1461492350358 | | | 41.335853393752 | 0.0958961187294 | | |
| 243 | 92.985346464931 | 8.29000000e-005 | | | 41.799000860429 | 0.1000472224636 | | |
| 244 | 93.655704381269 | 0.0030903916429 | | | 41.799000860429 | 0.0992314905638 | | |
| 245 | 93.715427746547 | 8.29000000e-005 | | | 42.895364651093 | 0.0992321645476 | | |
| 246 | 94.115623847935 | 2.9317799125406 | | | 42.895364651093 | 0.0987294858011 | | |
| 247 | 94.763425914602 | 0.0087757546557 | | | 43.461243631304 | 0.0987391543495 | | |
| 248 | 95.584879483332 | 8.29000000e-005 | | | 43.461243631304 | 0.0979403131147 | | |
| 249 | 96.148313214603 | 0.0055716478635 | | | 43.584830560429 | 0.0979706015604 | | |
| 250 | 96.172468891909 | 8.29000000e-005 | | | 43.584830560429 | 0.0971930571035 | | |
| 251 | 97.278318047937 | 0.0078226387304 | | | 43.607432122431 | 0.0972184523707 | | |




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 251 | 97.278318047937 | 0.0078226087334 | | | 43.607432122431 | 0.0972184628707 | | |
| 252 | 97.554293414603 | 0.0308800744057 | | | 43.607432122431 | 0.0964629532418 | | |
| 253 | 98.001589714604 | 0.822229600464 | | | 43.679392827096 | 0.0974496043154 | | |
| 254 | 98.059217743452 | 8.290000000e-005 | | | 43.679392827096 | 0.0966882792816 | | |
| 255 | 98.346348247937 | 0.0060881565147 | | | 43.942366827096 | 0.0968341477812 | | |
| 256 | 98.464023047937 | 0.807269751206 | | | 43.942366827096 | 0.0960834954726 | | |
| 257 | 98.482091247937 | 0.807724925158 | | | 44.003443871417 | 0.0960841381085 | | |
| 258 | 98.730943047937 | 1.621379089540 | | | 44.003443871417 | 0.0953460293538 | | |
| 259 | 98.856560181271 | 0.823855445644 | | | 44.198118010131 | 0.0953822149940 | | |
| 260 | 99.06101170703 | 8.290000000e-005 | | | 44.198118010131 | 0.0946541064834 | | |
| 261 | 100 | 8.290000000e-005 | | | 44.227402260429 | 0.0956556815337 | | |
| 262 | | | | | 44.227402260429 | 0.0948317091602 | | |
| 263 | | | | | 44.778405227096 | 0.0966542406108 | | |
| 264 | | | | | 44.778405227096 | 0.0969275169972 | | |
| 265 | | | | | 44.924588932276 | 0.0959576583757 | | |
| 266 | | | | | 44.924588932276 | 0.0952415663729 | | |
| 267 | | | | | 45.295517027096 | 0.0952868925407 | | |
| 268 | | | | | 45.295517027096 | 0.0945810637071 | | |
| 269 | | | | | 45.333315121759 | 0.0946400404072 | | |
| 270 | | | | | 45.333315121759 | 0.0939441578465 | | |
| 271 | | | | | 46.368594560429 | 0.0949972698313 | | |
| 272 | | | | | 46.368594560429 | 0.0943038858904 | | |
| 273 | | | | | 47.04189253272 | 0.0943044640135 | | |
| 274 | | | | | 47.04189253272 | 0.0936210983323 | | |
| 275 | | | | | 47.061764813074 | 0.0936216990589 | | |
| 276 | | | | | 47.061764813074 | 0.0929481816536 | | |
| 277 | | | | | 47.506020460429 | 0.0930237188383 | | |
| 278 | | | | | 47.506020460429 | 0.0923592637037 | | |
| 279 | | | | | 47.810462218016 | 0.0923598558466 | | |
| 280 | | | | | 47.810462218016 | 0.0917048214408 | | |
| 281 | | | | | 48.049816927096 | 0.0917675603027 | | |
| 282 | | | | | 48.049816927096 | 0.0911212530057 | | |
| 283 | | | | | 48.212532276494 | 0.0911218368085 | | |
| 284 | | | | | 48.212532276494 | 0.0904846211665 | | |
| 285 | | | | | 48.382282127096 | 0.0907020067711 | | |
| 286 | | | | | 48.382282127096 | 0.0900721317241 | | |




Run 1, The 3rd LAN

Extend

File Edit Library Model Text Define Run Window Help

[1604] Juanda Naval Air Base LAN

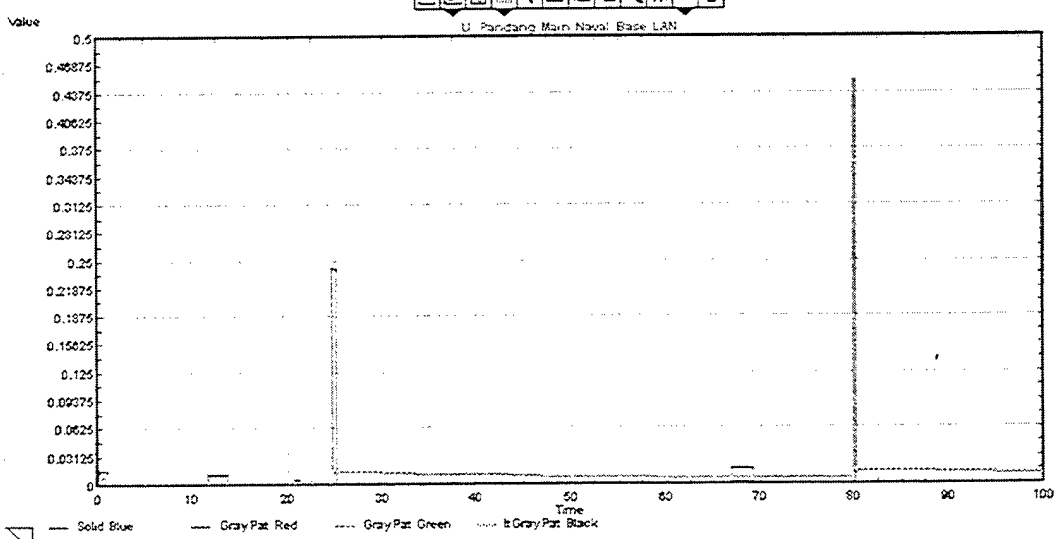
| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 3.48000000e-005 | 3.48000000e-005 | | | 3.48000000e-005 | 6.95000000e-005 | | |
| 1 | 11.187562590946 | 3.48000000e-005 | | | 3.48000000e-005 | 3.48000000e-005 | | |
| 2 | 18.169956023007 | 3.48000000e-005 | | | 11.187562590946 | 5.22000000e-005 | | |
| 3 | 23.497558693761 | 5.77777564e-005 | | | 11.187562590946 | 3.48000000e-005 | | |
| 4 | 30.090483740081 | 3.48000000e-005 | | | 14.523904183354 | 4.64000000e-005 | | |
| 5 | 71.357827141212 | 3.48000000e-005 | | | 14.523904183354 | 3.48000000e-005 | | |
| 6 | 100 | 3.48000000e-005 | | | 18.169956023007 | 4.35000000e-005 | | |
| 7 | | | | | 18.169956023007 | 3.48000000e-005 | | |
| 8 | | | | | 27.675384382892 | 4.17600000e-005 | | |
| 9 | | | | | 27.675384382892 | 3.48000000e-005 | | |
| 10 | | | | | 28.497558693761 | 4.44295261e-005 | | |
| 11 | | | | | 28.497558693761 | 3.80825066e-005 | | |
| 12 | | | | | 30.090483740081 | 4.30529552e-005 | | |
| 13 | | | | | 30.090483740081 | 3.76722196e-005 | | |
| 14 | | | | | 30.299141803628 | 4.20222196e-005 | | |
| 15 | | | | | 30.299141803628 | 3.75500841e-005 | | |
| 16 | | | | | 39.041366461802 | 4.12187507e-005 | | |
| 17 | | | | | 39.041366461802 | 3.70977756e-005 | | |
| 18 | | | | | 49.246702462985 | 4.05777756e-005 | | |
| 19 | | | | | 49.246702462985 | 3.68888870e-005 | | |
| 20 | | | | | 52.461388906126 | 4.00525233e-005 | | |
| 21 | | | | | 52.461388906126 | 3.67148130e-005 | | |
| 22 | | | | | 53.697814378041 | 3.95148130e-005 | | |
| 23 | | | | | 53.697814378041 | 3.65675197e-005 | | |
| 24 | | | | | 59.032896858995 | 3.92444428e-005 | | |
| 25 | | | | | 59.032896858995 | 3.64412683e-005 | | |
| 26 | | | | | 71.357827141212 | 3.89269826e-005 | | |
| 27 | | | | | 71.357827141212 | 3.63318504e-005 | | |
| 28 | | | | | 76.957392494668 | 3.86518504e-005 | | |
| 29 | | | | | 76.957392494668 | 3.62351098e-005 | | |
| 30 | | | | | 77.446298724003 | 3.84111098e-005 | | |
| 31 | | | | | 77.446298724003 | 3.61516027e-005 | | |
| 32 | | | | | 79.305196576189 | 3.81986916e-005 | | |
| 33 | | | | | 79.305196576189 | 3.60765420e-005 | | |
| 34 | | | | | 100 | 3.60765420e-005 | | |

Run 1, Data Delay within the 3rd LAN

Extend

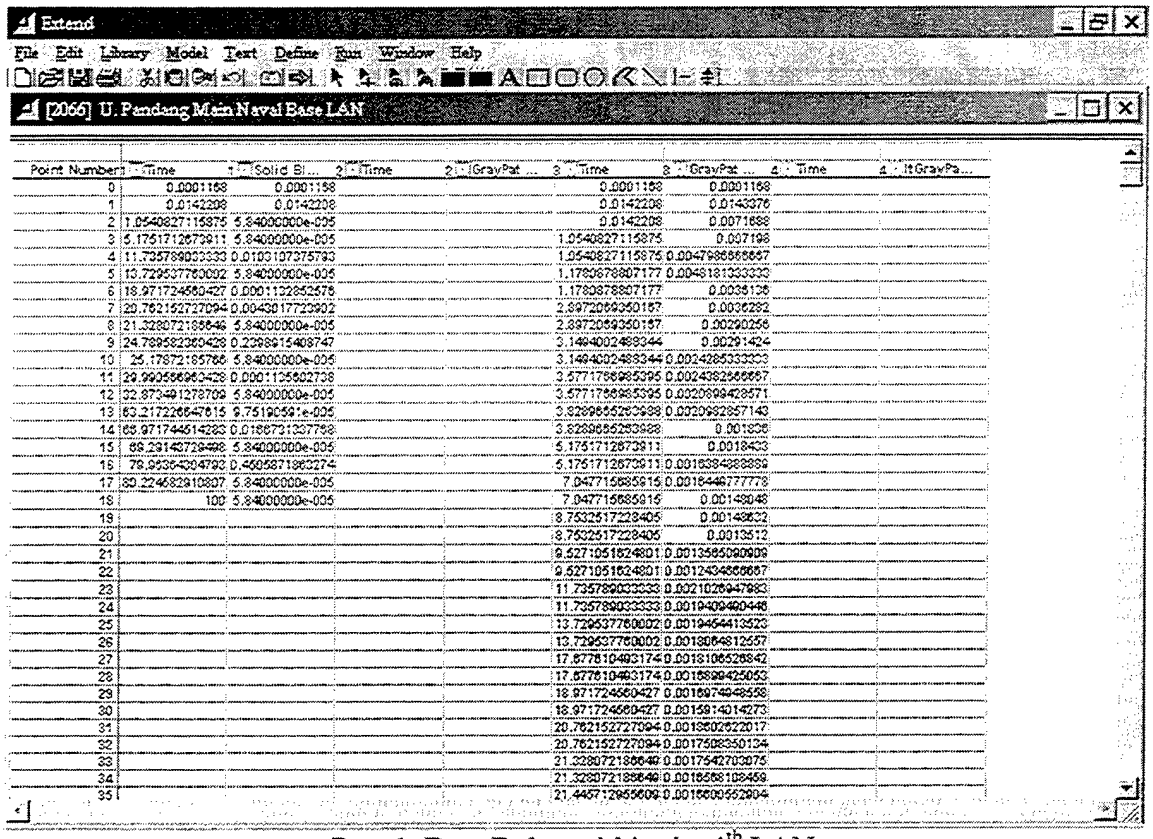
File Edit Library Model Text Define Run Window Help

[3066] U. Pandang Main Naval Base LAN



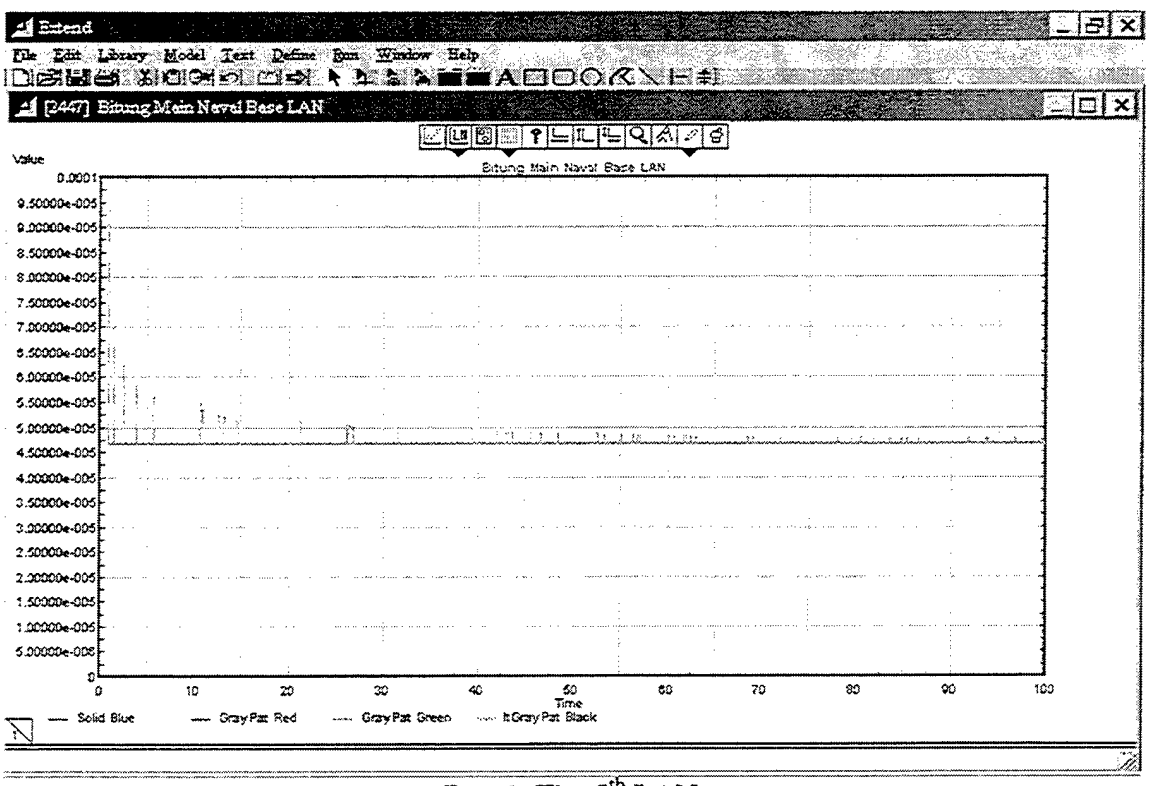

| | 82.504 | 0.1305 | 82.504 | 0.1305 | 82.504 | 0.1305 | 82.504 | 0.1305 |
|---|---|---|---|---|---|---|---|---|
| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |

Run 1, The 4th LAN




| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.0001168 | 0.0001168 | | | 0.0001168 | 0.0001168 | | |
| 1 | 0.0142208 | 0.0142208 | | | 0.0142208 | 0.0143376 | | |
| 2 | 1.054082711587 5 | 5.84000000e-005 | | | 0.0142208 | 0.0071688 | | |
| 3 | 5.175171267391 1 | 5.84000000e-005 | | | 1.054082711587 5 | 0.007198 | | |
| 4 | 11.73578903333 3 | 0.010310737579 3 | | | 1.054082711587 5 | 0.004798666667 | | |
| 5 | 13.72953776000 2 | 5.84000000e-005 | | | 1.178067880717 7 | 0.004818133333 3 | | |
| 6 | 18.97172456042 7 | 0.000113286257 6 | | | 1.178067880717 7 | 0.0038136 | | |
| 7 | 20.76215272709 4 | 0.004301772390 2 | | | 2.897206936015 7 | 0.0036282 | | |
| 8 | 21.32807218566 4 | 5.84000000e-005 | | | 2.897206936015 7 | 0.00290256 | | |
| 9 | 24.78958236042 8 | 0.229891540874 7 | | | 3.149400248934 4 | 0.00291424 | | |
| 10 | 25.17872185766 | 5.84000000e-005 | | | 3.149400248934 4 | 0.002428533333 3 | | |
| 11 | 29.99055663428 | 0.000113560273 8 | | | 3.577176695395 | 0.002436266667 | | |
| 12 | 32.87349127870 9 | 5.84000000e-005 | | | 3.577176695395 | 0.002069942857 1 | | |
| 13 | 63.21722664761 5 | 9.75190591e-005 | | | 3.828965526398 8 | 0.002069282857 143 | | |
| 14 | 65.97174461428 3 | 0.018673137758 | | | 3.828965526398 8 | 0.001836 | | |
| 15 | 68.29148728498 | 5.84000000e-005 | | | 5.175171267391 1 | 0.0018433 | | |
| 16 | 79.95364304792 | 0.460587196027 4 | | | 5.175171267391 1 | 0.001639498889 | | |
| 17 | 80.22468291080 7 | 5.84000000e-005 | | | 7.047715685915 | 0.001844677778 | | |
| 18 | 100 | 5.84000000e-005 | | | 7.047715685915 | 0.00148048 | | |
| 19 | | | | | 8.753251722840 5 | 0.00149602 | | |
| 20 | | | | | 8.753251722840 5 | 0.0013512 | | |
| 21 | | | | | 9.527105162480 1 | 0.001356509090 9 | | |
| 22 | | | | | 9.527105162480 1 | 0.001243466667 | | |
| 23 | | | | | 11.73578903333 3 | 0.002102694798 3 | | |
| 24 | | | | | 11.73578903333 3 | 0.001940946046 | | |
| 25 | | | | | 13.72953776000 2 | 0.001945441352 0 | | |
| 26 | | | | | 13.72953776000 2 | 0.001806481255 7 | | |
| 27 | | | | | 17.67781049317 4 | 0.001810652684 2 | | |
| 28 | | | | | 17.67781049317 4 | 0.001589942505 3 | | |
| 29 | | | | | 18.97172456042 7 | 0.001697498558 | | |
| 30 | | | | | 18.97172456042 7 | 0.001591401427 3 | | |
| 31 | | | | | 20.76215272709 4 | 0.001580262201 7 | | |
| 32 | | | | | 20.76215272709 4 | 0.001708650134 | | |
| 33 | | | | | 21.32807218566 4 | 0.001754270307 5 | | |
| 34 | | | | | 21.32807218566 4 | 0.001656810845 9 | | |
| 35 | | | | | 21.44571295660 9 | 0.001560056290 4 | | |

Run 1, Data Delay within the 4th LAN




Run 1, The 5th LAN

Extend

File Edit Library Model Text Define Run Window Help

[2447] Bitung Main Naval Base LAN

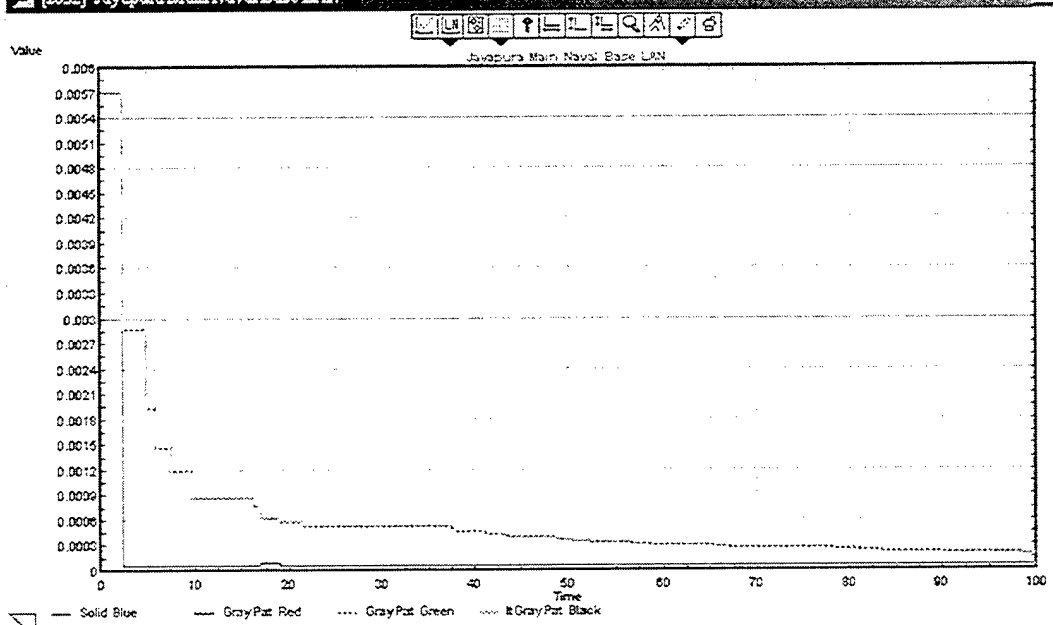
| Point Number | Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.876180756141 | 4.66000000e-005 | | | 0.876180756141 | 4.66000000e-005 | | |
| 1 | 1.57759730721 | 4.66000000e-005 | | | 0.917561100450 | 9.32000000e-005 | | |
| 2 | 2.59355237187 | 4.66000000e-005 | | | 0.917561100450 | 4.66000000e-005 | | |
| 3 | 10.6685543779 | 4.66000000e-005 | | | 1.57759730721 | 8.99000000e-005 | | |
| 4 | 21.2459515381 | 4.66000000e-005 | | | 1.57759730721 | 4.66000000e-005 | | |
| 5 | 39.3952242406 | 4.66000000e-005 | | | 2.59355237187 | 6.21333333e-005 | | |
| 6 | 68.6217296752 | 4.66000000e-005 | | | 2.59355237187 | 4.66000000e-005 | | |
| 7 | 100 | 4.66000000e-005 | | | 3.91896274268 | 5.82500000e-005 | | |
| 8 | | | | | 3.91896274268 | 4.66000000e-005 | | |
| 9 | | | | | 5.68174291018 | 5.59200000e-005 | | |
| 10 | | | | | 5.68174291018 | 4.66000000e-005 | | |
| 11 | | | | | 10.6685543779 | 5.40666667e-005 | | |
| 12 | | | | | 10.6685543779 | 4.66000000e-005 | | |
| 13 | | | | | 10.9858351651 | 5.32571429e-005 | | |
| 14 | | | | | 10.9858351651 | 4.66000000e-005 | | |
| 15 | | | | | 12.6917843897 | 5.24250000e-005 | | |
| 16 | | | | | 12.6917843897 | 4.66000000e-005 | | |
| 17 | | | | | 13.0126315611 | 5.17777778e-005 | | |
| 18 | | | | | 13.0126315611 | 4.66000000e-005 | | |
| 19 | | | | | 14.6983284578 | 5.12600000e-005 | | |
| 20 | | | | | 14.6983284578 | 4.66000000e-005 | | |
| 21 | | | | | 21.2459515381 | 5.03636636e-005 | | |
| 22 | | | | | 21.2459515381 | 4.66000000e-005 | | |
| 23 | | | | | 26.2532101610 | 5.04833333e-005 | | |
| 24 | | | | | 26.2532101610 | 4.66000000e-005 | | |
| 25 | | | | | 26.5482006497 | 5.01846154e-005 | | |
| 26 | | | | | 26.5482006497 | 4.66000000e-005 | | |
| 27 | | | | | 27.0098108915 | 4.99285714e-005 | | |
| 28 | | | | | 27.0098108915 | 4.66000000e-005 | | |
| 29 | | | | | 27.1274399872 | 4.97066667e-005 | | |
| 30 | | | | | 27.1274399872 | 4.66000000e-005 | | |
| 31 | | | | | 31.5392777420 | 4.95125000e-005 | | |
| 32 | | | | | 31.5392777420 | 4.66000000e-005 | | |
| 33 | | | | | 39.3952242406 | 4.93411765e-005 | | |
| 34 | | | | | 39.3952242406 | 4.66000000e-005 | | |
| 35 | | | | | 39.8050751335 | 4.61888889e-005 | | |

Run 1, Data Delay within the 5th LAN

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura Main Naval Base LAN




Run 1, The 6th LAN

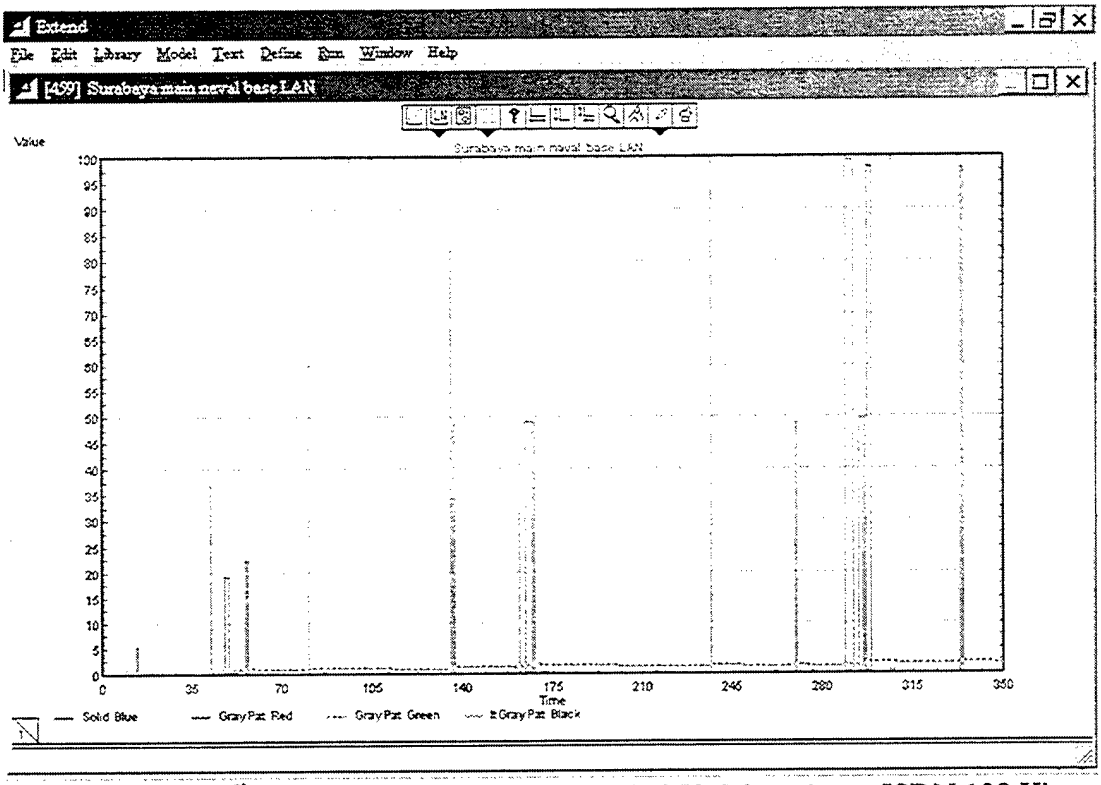
Extend

File Edit Library Model Text Define Run Window Help

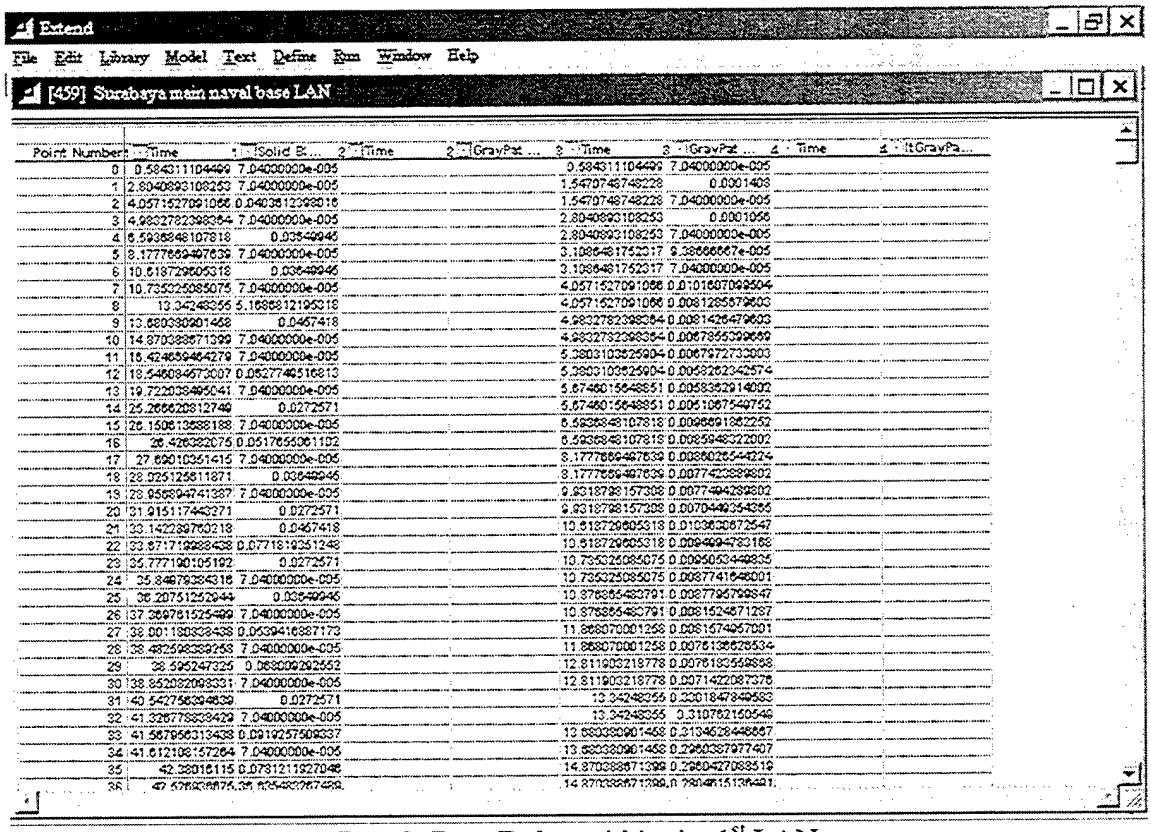
[2833] Jayapura Main Naval Base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : MGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.005692466667 | 0.005692466667 | | | 0.005692466667 | 0.005692466667 | | |
| 1 | 2.383388121276 8 | 4.660000000e-005 | | | 2.383388121276 8 | 0.005739066667 | | |
| 2 | 9.726178272413 3 | 4.660000000e-005 | | | 2.383388121276 8 | 0.002889633333 | | |
| 3 | 16.36166546833 2 | 4.660000000e-005 | | | 4.952194631342 2 | 0.002892833333 | | |
| 4 | 17.04373392610 1 | 7.779480031e-005 | | | 4.952194631342 2 | 0.001928555556 | | |
| 5 | 19.05859543326 6 | 4.660000000e-005 | | | 5.981748145003 7 | 0.001944088889 | | |
| 6 | 37.42530740278 8 | 4.660000000e-005 | | | 5.981748145003 7 | 0.001453066667 | | |
| 7 | 65.36525583280 5 | 4.660000000e-005 | | | 7.655992097746 8 | 0.001469716667 | | |
| 8 | 100 | 4.660000000e-005 | | | 7.655992097746 8 | 0.001175773333 | | |
| 9 | | | | | 9.726178272413 3 | 0.001185093333 | | |
| 10 | | | | | 9.726178272413 3 | 0.000987577778 | | |
| 11 | | | | | 9.754146381190 4 | 0.000965044444 | | |
| 12 | | | | | 9.754146381190 4 | 0.000853152381 | | |
| 13 | | | | | 16.36166546833 2 | 0.000859809523 8 | | |
| 14 | | | | | 16.36166546833 2 | 0.000752333333 | | |
| 15 | | | | | 16.85467048064 4 | 0.000758158333 3 | | |
| 16 | | | | | 16.85467048064 4 | 0.000673918518 5 | | |
| 17 | | | | | 17.04373392610 1 | 0.000682562385 5 | | |
| 18 | | | | | 17.04373392610 1 | 0.000614208147 | | |
| 19 | | | | | 19.05859543326 6 | 0.000618965147 | | |
| 20 | | | | | 19.05859543326 6 | 0.000562696487 3 | | |
| 21 | | | | | 21.44735988001 2 | 0.000586932860 9 | | |
| 22 | | | | | 21.44735988001 2 | 0.000519688455 8 | | |
| 23 | | | | | 37.42530740278 8 | 0.000523571789 1 | | |
| 24 | | | | | 37.42530740278 8 | 0.000483297038 1 | | |
| 25 | | | | | 37.99588704026 5 | 0.000486881651 6 | | |
| 26 | | | | | 37.99588704026 5 | 0.000462104390 7 | | |
| 27 | | | | | 41.22859746246 9 | 0.000465432962 1 | | |
| 28 | | | | | 41.22859746246 9 | 0.000425070764 7 | | |
| 29 | | | | | 43.32635438840 3 | 0.000428177431 3 | | |
| 30 | | | | | 43.32635438840 3 | 0.000401416341 9 | | |
| 31 | | | | | 43.69804077852 6 | 0.000404323841 9 | | |
| 32 | | | | | 43.69804077852 6 | 0.000380644792 3 | | |
| 33 | | | | | 48.72610026996 1 | 0.000383285968 8 | | |
| 34 | | | | | 48.72610026996 1 | 0.000361992303 9 | | |
| 35 | | | | | 50.67761119746 | 0.000364681192 8 | | |

Run 1, Data Delay within the 6th LAN




Run 2, The 1st LAN, Using Simulation Set Up 350, Mean 1 sec, ISDN 128 Kbps



Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya main naval base LAN

| Point Number | 1 Time | 1 Solid B... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.584311104499 | 7.04000000e-005 | | | 0.584311104499 | 7.04000000e-005 | | |
| 1 | 2.80408993108253 | 7.04000000e-005 | | | 1.547074874822 8 | 0.0001403 | | |
| 2 | 4.05715270910 66 | 0.040351239801 8 | | | 1.547074874822 8 | 7.04000000e-005 | | |
| 3 | 4.98327823988 64 | 7.04000000e-005 | | | 2.80408993108253 | 0.0001056 | | |
| 4 | 6.59368481078 18 | 0.03549946 | | | 2.80408993108253 | 7.04000000e-005 | | |
| 5 | 8.17776594976 39 | 7.04000000e-005 | | | 3.10864817523 17 | 9.38666667e-005 | | |
| 6 | 10.6187296053 18 | 0.03549946 | | | 3.10864817523 17 | 7.04000000e-005 | | |
| 7 | 10.7353250850 75 | 7.04000000e-005 | | | 4.05715270910 66 | 0.010160709950 4 | | |
| 8 | 13.342483 55 | 5.16868121953 18 | | | 4.05715270910 66 | 0.008128557960 3 | | |
| 9 | 13.6803809014 68 | 0.0467418 | | | 4.98327823988 64 | 0.008142647960 3 | | |
| 10 | 14.8703886713 99 | 7.04000000e-005 | | | 4.98327823988 64 | 0.006785539965 9 | | |
| 11 | 18.4246594642 79 | 7.04000000e-005 | | | 5.38031035259 04 | 0.006797273003 | | |
| 12 | 18.5460946730 07 | 0.052774051681 3 | | | 5.38031035259 04 | 0.005826234257 4 | | |
| 13 | 19.7220384950 41 | 7.04000000e-005 | | | 5.67460156488 51 | 0.005835291400 2 | | |
| 14 | 25.2666208127 49 | 0.0272571 | | | 5.67460156488 51 | 0.005106754975 2 | | |
| 15 | 26.1506135888 188 | 7.04000000e-005 | | | 6.59368481078 18 | 0.009869186225 2 | | |
| 16 | 26.426382075 | 0.051765506110 2 | | | 6.59368481078 18 | 0.008594832200 2 | | |
| 17 | 27.6901036141 5 | 7.04000000e-005 | | | 8.17776594976 39 | 0.008602654422 4 | | |
| 18 | 28.925125811871 | 0.03549946 | | | 8.17776594976 39 | 0.007742388980 2 | | |
| 19 | 29.9568947413 87 | 7.04000000e-005 | | | 9.93187981573 08 | 0.007749428980 2 | | |
| 20 | 31.9151174403 71 | 0.0272571 | | | 9.93187981573 08 | 0.007044935485 6 | | |
| 21 | 33.1422897602 18 | 0.0467418 | | | 10.6187296053 18 | 0.010363067254 7 | | |
| 22 | 33.8717199884 38 | 0.077181935124 8 | | | 10.6187296053 18 | 0.009499478316 8 | | |
| 23 | 35.7771901051 92 | 0.0272571 | | | 10.7353250850 75 | 0.009505344983 5 | | |
| 24 | 35.8467938431 6 | 7.04000000e-005 | | | 10.7353250850 75 | 0.008774164600 1 | | |
| 25 | 36.2075125294 4 | 0.03549946 | | | 10.8768654837 91 | 0.008779579984 7 | | |
| 26 | 37.3697615254 99 | 7.04000000e-005 | | | 10.8768654837 91 | 0.008152467128 7 | | |
| 27 | 38.0011809338 438 | 0.053941687173 | | | 11.8680700012 58 | 0.008167405700 1 | | |
| 28 | 38.4825989392 58 | 7.04000000e-005 | | | 11.8680700012 58 | 0.007613662853 4 | | |
| 29 | 38.595247325 | 0.058009292552 | | | 12.8119003218 78 | 0.007613659898 8 | | |
| 30 | 38.8520820983 31 | 7.04000000e-005 | | | 12.8119003218 78 | 0.007142208737 6 | | |
| 31 | 40.5427563948 39 | 0.0272571 | | | 13.342483 55 | 0.320018478495 83 | | |
| 32 | 41.3267788239 429 | 7.04000000e-005 | | | 13.342483 55 | 0.310782160546 | | |
| 33 | 41.5679563134 38 | 0.091925750933 7 | | | 13.6803809014 68 | 0.310462844665 7 | | |
| 34 | 41.6121061572 64 | 7.04000000e-005 | | | 13.6803809014 68 | 0.295003797740 7 | | |
| 35 | 42.38016115 | 0.078121192704 6 | | | 14.8703886713 99 | 0.295042708851 9 | | |
| 36 | 42.5268268875.35 | 7.04000000e-005 | | | 14.8703886713 99 | 0.280461513644 1 | | |

Run 2, Data Delay within the 1st LAN

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya main naval base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 GravPa... |
|---|---|---|---|---|---|---|---|---|
| 37 | 42.651580462213 | 7.04000000e-005 | | | 16.424669464279 | 0.280465218912 3 | | |
| 38 | 46.989954772354 | 0.0852403997868 | | | 16.424669464279 | 0.256441957965 7 | | |
| 39 | 47.571911554011 | 7.04000000e-005 | | | 16.428376446851 | 0.256445477965 7 | | |
| 40 | 47.971983275 | 19.01883985098 | | | 16.428376446851 | 0.253757598063 5 | | |
| 41 | 49.134371263438 | 0.118190363764 | | | 17.227392676277 | 0.253760950444 4 | | |
| 42 | 49.295685532731 | 0.048917869746 3 | | | 17.227392676277 | 0.242226381679 | | |
| 43 | 49.740264464275 | 0.03549946 | | | 18.546094573007 | 0.246079768882 5 | | |
| 44 | 50.321054439359 | 7.04000000e-005 | | | 18.546094573007 | 0.234424126585 9 | | |
| 45 | 50.463246863438 | 0.195254009894 3 | | | 19.722038495041 | 0.234427187435 4 | | |
| 46 | 52.596345475 | 0.074965546823 6 | | | 19.722038495041 | 0.224659387958 9 | | |
| 47 | 55.514625383104 | 7.04000000e-005 | | | 22.056154307986 | 0.224662321292 3 | | |
| 48 | 55.810530425 | 22.25861957299 5 | | | 22.056154307986 | 0.215675828440 6 | | |
| 49 | 58.489188639218 | 0.03549946 | | | 23.111258964377 | 0.215678644440 6 | | |
| 50 | 56.546544985707 | 7.04000000e-005 | | | 23.111258964377 | 0.207383011962 1 | | |
| 51 | 56.553002017145 | 0.0272571 | | | 23.294424246688 | 0.207385019554 4 | | |
| 52 | 57.159758592078 | 7.04000000e-005 | | | 23.294424246688 | 0.199705055963 5 | | |
| 53 | 58.712557575 | 0.054121395585 | | | 23.396239897227 | 0.199707663270 9 | | |
| 54 | 59.134059419058 | 7.04000000e-005 | | | 23.396239897227 | 0.192575248822 | | |
| 55 | 60.981415213437 | 0.038231152041 5 | | | 25.266620812749 | 0.193548714879 1 | | |
| 56 | 64.241140820527 | 0.0272571 | | | 25.266620812749 | 0.188874821069 5 | | |
| 57 | 65.071771080444 | 7.04000000e-005 | | | 25.150613588188 | 0.188877048855 7 | | |
| 58 | 67.159597175 | 0.059717872759 5 | | | 26.150613588188 | 0.180647813706 5 | | |
| 59 | 67.246987592267 | 7.04000000e-005 | | | 26.426382075 | 0.182373320570 8 | | |
| 60 | 71.444027688072 | 0.088223534859 8 | | | 26.426382075 | 0.176490319907 3 | | |
| 61 | 71.584394518871 | 7.04000000e-005 | | | 27.690103514 15 | 0.176492590875 | | |
| 62 | 74.412547638438 | 0.0579611777773 | | | 27.690103514 15 | 0.170977197410 2 | | |
| 63 | 74.426810109899 | 7.04000000e-005 | | | 28.022442900887 | 0.170979397410 2 | | |
| 64 | 74.432755138438 | 0.0557188573582 | | | 28.022442900887 | 0.165798205549 2 | | |
| 65 | 75.638071125112 | 7.04000000e-005 | | | 28.025125611871 | 0.165904247488 6 | | |
| 66 | 77.861040038438 | 0.071915746371 4 | | | 28.025125611871 | 0.161895298833 1 | | |
| 67 | 77.880207894704 | 7.04000000e-005 | | | 28.956894741387 | 0.161997389621 3 | | |
| 68 | 79.407688505879 | 0.0272571 | | | 28.956894741387 | 0.157368873346 4 | | |
| 69 | 80.165782739961 | 7.04000000e-005 | | | 29.047780642846 | 0.157370884775 | | |
| 70 | 80.719975625 | 62.53058757605 1 | | | 29.047780642846 | 0.152999471309 | | |
| 71 | 80.747139525 | 0.0806206743821 | | | 29.107588406156 | 0.153001428884 6 | | |
| 72 | 80.937935463882 | 7.04000000e-005 | | | 29.107588406156 | 0.148868253165 5 | | |
| 73 | 82.927474699903 | 0.0272571 | | | 29.339879106891 | 0.148868155868 2 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya main naval base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 GravPa... |
|---|---|---|---|---|---|---|---|---|
| 73 | 82.927474699903 | 0.0272571 | | | 29.339879106891 | 0.148868155868 2 | | |
| 74 | 83.239255472571 | 7.04000000e-005 | | | 29.339879106891 | 0.144950572819 1 | | |
| 75 | 84.163530355307 | 0.03549946 | | | 29.358316669719 | 0.144952425450 7 | | |
| 76 | 84.413873668086 | 7.04000000e-005 | | | 29.358316669719 | 0.141235965929 | | |
| 77 | 86.610748691494 | 0.250974639829 8 | | | 30.477295028196 | 0.141237501721 2 | | |
| 78 | 87.540746735486 | 0.0272571 | | | 30.477295028196 | 0.137706564178 1 | | |
| 79 | 88.041987427184 | 7.04000000e-005 | | | 30.578316634857 | 0.137708324178 1 | | |
| 80 | 88.262892313023 | 0.0272571 | | | 30.578316634857 | 0.134349584564 | | |
| 81 | 88.821456403796 | 7.04000000e-005 | | | 30.904467321430 | 0.134351301637 2 | | |
| 82 | 89.514706344873 | 0.0753582295988 | | | 30.904467321430 | 0.131152461122 | | |
| 83 | 90.613538388439 | 0.0915034095821 | | | 31.354491019597 | 0.131154137312 5 | | |
| 84 | 91.495225712612 | 0.0272571 | | | 31.354491019597 | 0.128104041095 9 | | |
| 85 | 92.303355716529 | 7.04000000e-005 | | | 31.541972941942 | 0.128105678305 2 | | |
| 86 | 105.07227510565 | 0.03549946 | | | 31.541972941942 | 0.125194185616 5 | | |
| 87 | 107.47874622504 | 7.04000000e-005 | | | 31.915117443271 | 0.125812655161 9 | | |
| 88 | 110.164463146 32 | 0.03549946 | | | 31.915117443271 | 0.123017805936 1 | | |
| 89 | 111.09646471488 | 7.04000000e-005 | | | 33.142289760218 | 0.124034290380 6 | | |
| 90 | 111.28789075 | 0.348203280512 1 | | | 33.142289760218 | 0.121337892763 8 | | |
| 91 | 111.234278175 | 0.0577239757052 | | | 33.671719968438 | 0.123015760918 5 | | |
| 92 | 112.378583875253 | 7.04000000e-005 | | | 33.671719968438 | 0.120398404303 2 | | |
| 93 | 113.772921211 | 0.0272571 | | | 35.777190105192 | 0.120978342601 1 | | |
| 94 | 113.938524713 73 | 7.04000000e-005 | | | 35.777190105192 | 0.118457980463 5 | | |
| 95 | 116.066291649 75 | 0.0272571 | | | 35.849793843 16 | 0.118459427130 2 | | |
| 96 | 116.579251975 09 | 7.04000000e-005 | | | 35.849793843 16 | 0.116041887891 | | |
| 97 | 118.208751038 44 | 0.0537231727857 | | | 36.207512529 44 | 0.116787774635 7 | | |
| 98 | 119.115267539 92 | 0.0272571 | | | 36.207512529 44 | 0.114451039046 | | |
| 99 | 120.579675634 39 | 7.04000000e-005 | | | 37.369781525499 | 0.114452447046 | | |
| 100 | 121.415554355 34 | 0.03549946 | | | 37.369781525499 | 0.112208281418 7 | | |
| 101 | 121.579395375 96 | 7.04000000e-005 | | | 38.001180838438 | 0.113265951587 6 | | |
| 102 | 122.075587475 62 | 0.0272571 | | | 38.001180838438 | 0.111087770018 6 | | |
| 103 | 122.826299924 6 | 7.04000000e-005 | | | 38.482598389258 | 0.111089123864 7 | | |
| 104 | 134.204233997 01 | 0.03549946 | | | 38.482598389258 | 0.108993102659 8 | | |
| 105 | 135.598799875 | 81.810698925578 | | | 38.487593518514 | 0.108994430961 6 | | |
| 106 | 135.899616390 7 | 7.04000000e-005 | | | 38.487593518514 | 0.106976016573 5 | | |
| 107 | 136.88073355 | 48.460451273 7 | | | 38.595247325 | 0.108235446917 | | |
| 108 | 137.206782077 71 | 7.04000000e-005 | | | 38.595247325 | 0.106267629700 3 | | |
| 109 | 1146.840259498098 | 0.03549946 | | | 38.857882092331 | 0.106268827700 3 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 208 | 262.6113955244 | 0.0272571 | | | 68.3207503897331 | 0.8073277607415 | | |
| 209 | 263.0567539499 | 7.04000000e-005 | | | 68.9001321171191 | 0.8073284312177 | | |
| 210 | 266.3962789449 | 0.0272571 | | | 68.9001321171191 | 0.7997121252628 | | |
| 211 | 267.2235225243 | 7.04000000e-005 | | | 69.5750887475825 | 0.7997127894138 | | |
| 212 | 269.6732670832 | 0.0364994500001 | | | 69.5750887475825 | 0.7922388381129 | | |
| 213 | 270.0373955613346 | 48.782747035709 | | | 70.0670560320509 | 0.7922394960548 | | |
| 214 | 270.4550208250 | 7.04000000e-005 | | | 70.0670560320509 | 0.7849003946154 | | |
| 215 | 271.2137203750 | 0.0279220245504 | | | 70.7311467886 | 0.7849046970172 | | |
| 216 | 271.4139950287 | 7.04000000e-005 | | | 70.7311467886 | 0.7777026374116 | | |
| 217 | 275.0053248384 | 0.1082952253109 | | | 71.4440276880072 | 0.7784947879828 | | |
| 218 | 275.4077519884 | 0.2258920527661 | | | 71.4440276880072 | 0.7714175629429 | | |
| 219 | 276.5321094706 | 7.04000000e-005 | | | 71.6843945618871 | 0.7714182020429 | | |
| 220 | 280.1358576154 | 0.0364994500001 | | | 71.6843945618871 | 0.7644684885511 | | |
| 221 | 280.1602254134 | 0.0577994471015 | | | 71.6928783935875 | 0.7644691227452 | | |
| 222 | 281.7013957260 | 7.04000000e-005 | | | 71.6928783935875 | 0.7575435955779 | | |
| 223 | 281.8288477994 | 0.0364994500001 | | | 74.4125479398438 | 0.7581810160937 | | |
| 224 | 282.5403246791 | 7.04000000e-005 | | | 74.4125479398438 | 0.7514616265728 | | |
| 225 | 288.8472294600 | 59.1418789346 | | | 74.4268101098896 | 0.7514622465795 | | |
| 226 | 292.1285510207 | 7.04000000e-005 | | | 74.4268101098896 | 0.7448635631798 | | |
| 227 | 294.3062804999 | 0.0272571 | | | 74.4327561398438 | 0.7454370440847 | | |
| 228 | 294.3309917502 | 49.4496485790085 | | | 74.4327561398438 | 0.7389540831292 | | |
| 229 | 295.7775740319 | 0.0364994500001 | | | 76.5380711261112 | 0.7389555953001 | | |
| 230 | 296.7354623002 | 48.5249061884854 | | | 76.5380711261112 | 0.7325852288447 | | |
| 231 | 297.4864879250 | 97.9502983980015 | | | 77.8610430384438 | 0.7325052600985 | | |
| 232 | 299.3228130982 | 7.04000000e-005 | | | 77.8610430384438 | 0.7262385487712 | | |
| 233 | 302.0121642384 | 0.0773495983311 | | | 77.8802078934704 | 0.7262391504806 | | |
| 234 | 302.4122527134 | 0.0534925178568 | | | 77.8802078934704 | 0.7207785462053 | | |
| 235 | 303.3141926548 | 7.04000000e-005 | | | 78.3292498880023 | 0.7207792458155 | | |
| 236 | 303.5114254737 | 0.0364994500001 | | | 78.3292498880023 | 0.7147222773533 | | |
| 237 | 304.6315148801 | 7.04000000e-005 | | | 78.6341122386908 | 0.7147228689599 | | |
| 238 | 304.8259931749 | 0.0892985525903 | | | 78.6341122386908 | 0.7087663450519 | | |
| 239 | 305.8762930928 | 0.0719297093596 | | | 79.3699750815591 | 0.7087674017186 | | |
| 240 | 306.0594952158 | 0.0669610522858 | | | 79.3699750815591 | 0.7029098496382 | | |
| 241 | 307.3904122313 | 7.04000000e-005 | | | 79.4076885506879 | 0.7031351140275 | | |
| 242 | 308.2263566346 | 0.5472119775731 | | | 79.4076885506879 | 0.6973717123461 | | |
| 243 | 308.2910109569 | 7.04000000e-005 | | | 80.1657827399861 | 0.6973722893953 | | |
| 244 | 310.8880173944 | 0.0786973973347 | | | 80.1657827399861 | 0.6917029268856 | | |

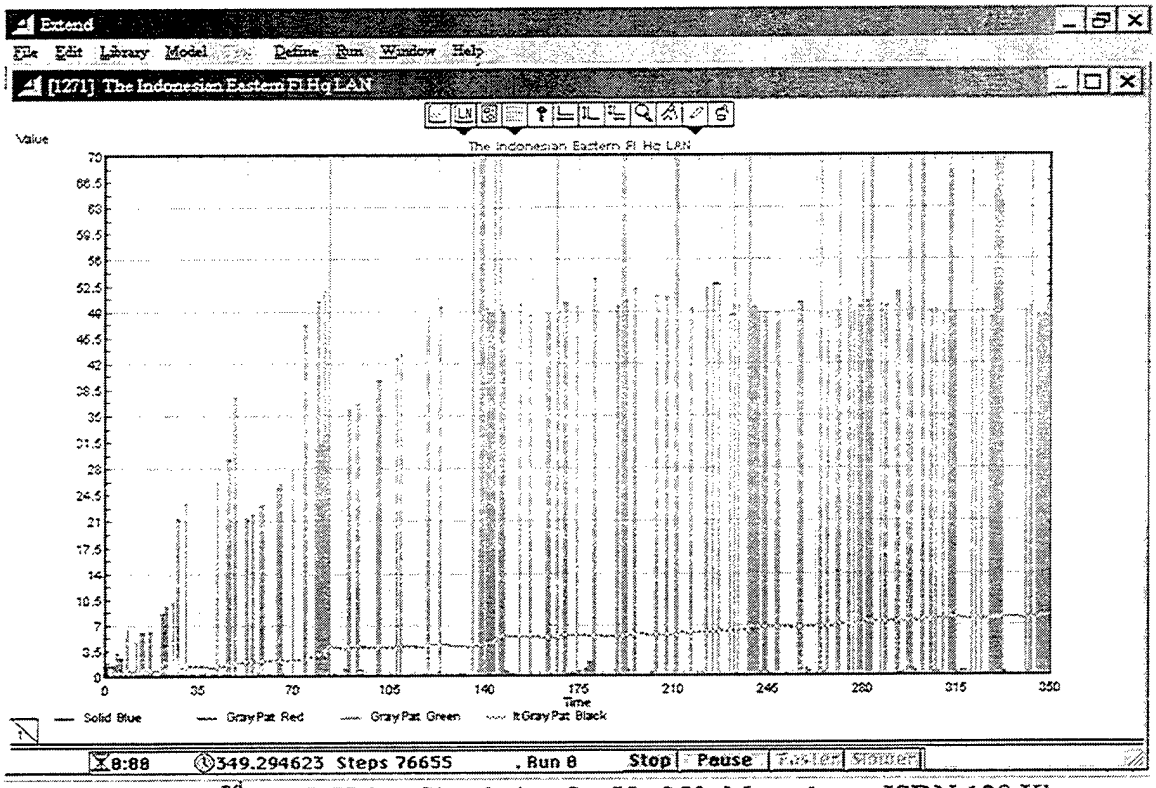
Extend

File Edit Library Model Text Define Run Window Help

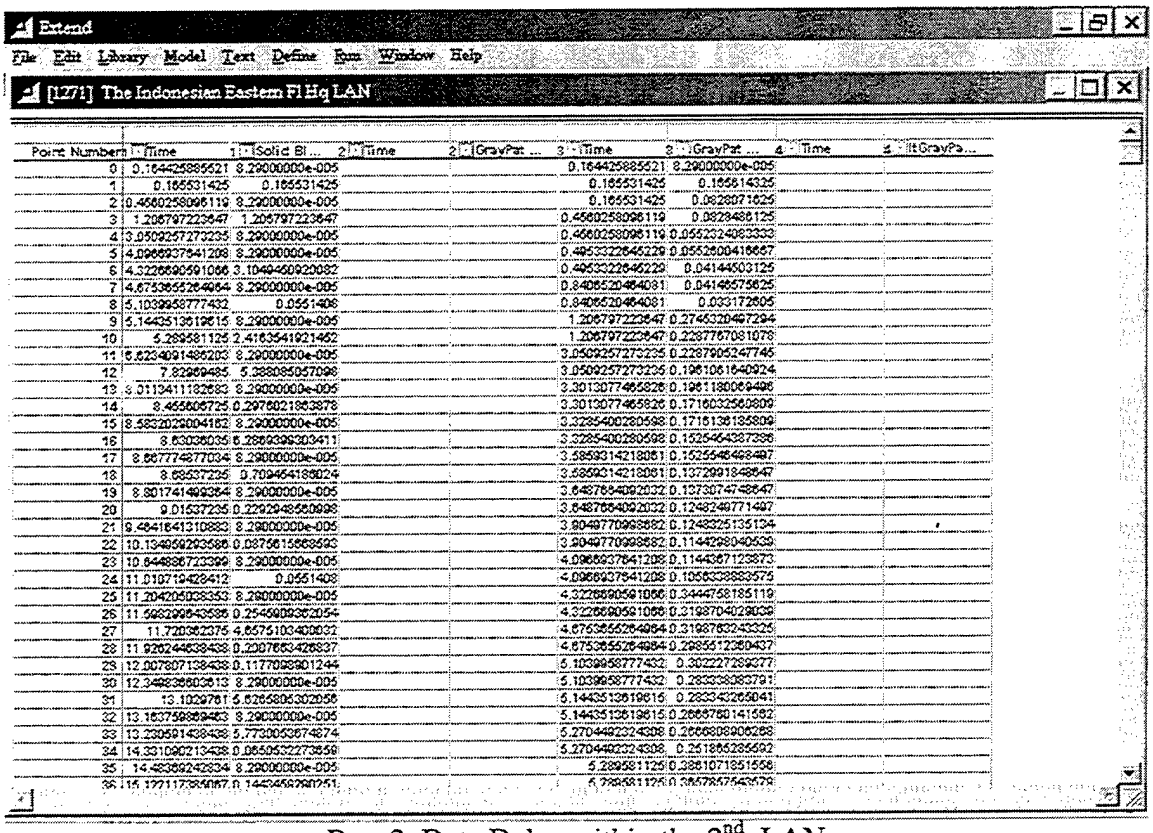
[459] Surabaya main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 245 | 310.9220670024 | 7.04000000e-005 | | | 80.5540168117795 | 0.6917031683403 | | |
| 246 | 310.9368154184 | 0.0364994500001 | | | 80.5540168117795 | 0.6861249169857 | | |
| 247 | 311.4381058304 | 0.0272571 | | | 80.719975625 | 1.1904038498571 | | |
| 248 | 312.2148194929 | 0.0364994500001 | | | 80.719975625 | 1.1808806120582 | | |
| 249 | 313.5736295944 | 7.04000000e-005 | | | 80.7471395525 | 1.1813655844633 | | |
| 250 | 315.5211535524 | 0.0364994500001 | | | 80.7471395525 | 1.1719896571154 | | |
| 251 | 316.1354521346 | 0.1098614159403 | | | 80.9379254603882 | 1.1719902259465 | | |
| 252 | 316.3235954539 | 0.0364994500001 | | | 80.9379254603882 | 1.1627619563517 | | |
| 253 | 316.9882432251 | 7.04000000e-005 | | | 82.9274746903 | 1.1629765791863 | | |
| 254 | 318.7513966023 | 0.0272571 | | | 82.9274746903 | 1.1538908246614 | | |
| 255 | 318.9895757987 | 7.04000000e-005 | | | 83.2392654725 71 | 1.1538910746614 | | |
| 256 | 319.5847130879 8 | 0.0272571 | | | 83.2392654725 71 | 1.1449464802842 | | |
| 257 | 319.8030651449 3 | 7.04000000e-005 | | | 83.5190387365172 | 1.1449470260206 | | |
| 258 | 321.0167026346 | 0.0729025746726 | | | 83.5190387365172 | 1.1361397412051 | | |
| 259 | 321.5440925005 | 7.04000000e-005 | | | 83.8311745195440 | 1.1361402927435 | | |
| 260 | 321.7587142563 1 | 0.0963751963957 | | | 83.8311745195440 | 1.1274674581577 | | |
| 261 | 321.8768014588 | 7.04000000e-005 | | | 83.9474839567076 | 1.1274679939623 | | |
| 262 | 324.5515788585 | 0.0467418 | | | 83.9474839567076 | 1.1189265693686 | | |
| 263 | 325.5527527489 | 7.04000000e-005 | | | 84.1635303355307 | 1.1192030803535 | | |
| 264 | 329.4800037798 | 0.0364994500001 | | | 84.1635303355307 | 1.1107880196999 | | |
| 265 | 329.8334112166 | 7.04000000e-005 | | | 84.4138736808 6 | 1.1107885489223 | | |
| 266 | 332.0815880255 | 0.0364994500001 | | | 84.4138736808 6 | 1.1024990821393 | | |
| 267 | 333.6089527502 | 97.7197093410 18 | | | 85.5107485914 94 | 1.1043720275858 | | |
| 268 | 334.7769138846 | 0.1079406498751 | | | 85.5107485914 94 | 1.0961914940481 | | |
| 269 | 335.4734549164 | 7.04000000e-005 | | | 87.5407457354 86 | 1.0963933984625 | | |
| 270 | 337.5772137113 4 | 0.0364994500001 | | | 87.5407457354 86 | 1.0883316823271 | | |
| 271 | 340.5738992767 | 7.04000000e-005 | | | 88.0419874271 84 | 1.0883321999742 | | |
| 272 | 341.1733224502 | 0.0997857584411 | | | 88.0419874271 84 | 1.0803881690175 | | |
| 273 | 341.7975319096 6 | 7.04000000e-005 | | | 88.2628923133 22 | 1.0805871262513 | | |
| 274 | 346.3533827138 | 0.0272571 | | | 88.2628923133 22 | 1.0727557847572 | | |
| 275 | 346.8592317605 7 | 7.04000000e-005 | | | 88.3297367158 84 | 1.0729542999746 | | |
| 276 | 347.7605113464 8 | 0.0272571 | | | 88.3297367158 84 | 1.0652352042913 | | |
| 277 | 348.9885390141 | 0.0364994500001 | | | 88.8214564337 96 | 1.0652357107651 | | |
| 278 | 349.1367395541 9 | 7.04000000e-005 | | | 88.8214564337 96 | 1.0576258842507 | | |
| 279 | 350 | 7.04000000e-005 | | | 89.5147063448 73 | 1.0581723009008 | | |
| 280 | | | | | 89.5147063448 73 | 1.0508675328092 | | |
| 281 | | | | | 90.6135395984 29 | 1.0513164831698 | | |

Run 2, Data Delay within the 1st LAN




Run 2, the 2nd LAN, Using Simulation Set Up 350, Mean 1 sec, ISDN 128 Kbps




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.164425885521 | 8.29000000e-005 | | | 0.164425885521 | 8.29000000e-005 | | |
| 1 | 0.165531425 | 0.165531425 | | | 0.165531425 | 0.165614325 | | |
| 2 | 0.456025809611 9 | 8.29000000e-005 | | | 0.165531425 | 0.0828071625 | | |
| 3 | 1.206797223647 | 1.206797223647 | | | 0.456025809611 9 | 0.0828486125 | | |
| 4 | 3.050925727323 5 | 8.29000000e-005 | | | 0.456025809611 9 | 0.055232483333 | | |
| 5 | 4.096693784120 8 | 8.29000000e-005 | | | 0.495332284622 9 | 0.055260041667 | | |
| 6 | 4.322669059106 6 | 3.104946092209 2 | | | 0.495332284622 9 | 0.04144503125 | | |
| 7 | 4.675365526464 | 8.29000000e-005 | | | 0.840652046408 1 | 0.04146575625 | | |
| 8 | 5.103995877743 2 | 0.0551408 | | | 0.840652046408 1 | 0.033172605 | | |
| 9 | 5.144251361961 5 | 8.29000000e-005 | | | 1.206797223647 | 0.274532046729 4 | | |
| 10 | 5.289581125 | 2.416354192146 2 | | | 1.206797223647 | 0.228776708107 8 | | |
| 11 | 5.623409148620 3 | 8.29000000e-005 | | | 3.050925727323 5 | 0.228790524774 5 | | |
| 12 | 7.82969485 | 5.288085057098 | | | 3.050925727323 5 | 0.196106164092 4 | | |
| 13 | 8.011241118258 3 | 8.29000000e-005 | | | 3.301307746582 6 | 0.196118006949 6 | | |
| 14 | 8.465606725 | 0.297602186387 8 | | | 3.301307746582 6 | 0.171603256809 | | |
| 15 | 8.583202920041 82 | 8.29000000e-005 | | | 3.328540028059 8 | 0.171613613580 9 | | |
| 16 | 8.630036035 | 5.288939303411 | | | 3.328540028059 8 | 0.152546438738 6 | | |
| 17 | 8.667774877034 | 8.29000000e-005 | | | 3.585931421806 1 | 0.152546498497 | | |
| 18 | 8.68637235 | 9.709464188024 | | | 3.585931421806 1 | 0.137299184647 | | |
| 19 | 8.801741499364 | 8.29000000e-005 | | | 3.648765409203 2 | 0.137307474647 | | |
| 20 | 9.01537235 | 0.229294856098 | | | 3.648765409203 2 | 0.124824771497 | | |
| 21 | 9.484164131088 3 | 8.29000000e-005 | | | 3.904977099868 2 | 0.124832513513 4 | | |
| 22 | 10.134959293586 | 0.087561586959 3 | | | 3.904977099868 2 | 0.114429840539 | | |
| 23 | 10.644886723399 | 8.29000000e-005 | | | 4.096693784120 8 | 0.114436712987 3 | | |
| 24 | 11.010719428412 | 0.0551408 | | | 4.096693784120 8 | 0.105632883575 | | |
| 25 | 11.204205038353 | 8.29000000e-005 | | | 4.322669059106 6 | 0.344475818511 9 | | |
| 26 | 11.596299643586 | 0.254590936205 4 | | | 4.322669059106 6 | 0.319870429039 | | |
| 27 | 11.720362375 | 4.657510340003 2 | | | 4.675365526464 | 0.319876324333 5 | | |
| 28 | 11.926244638438 | 0.200765342683 7 | | | 4.675365526464 | 0.298512350437 | | |
| 29 | 12.007807138438 | 0.117709890124 4 | | | 5.103995877743 2 | 0.302227289377 | | |
| 30 | 12.349836603613 | 8.29000000e-005 | | | 5.103995877743 2 | 0.283238383791 | | |
| 31 | 13.1029761 | 5.626580530205 6 | | | 5.144251361961 5 | 0.283343265041 | | |
| 32 | 13.163759869463 | 8.29000000e-005 | | | 5.144251361961 5 | 0.266578014158 2 | | |
| 33 | 13.239591438438 | 5.773006367487 4 | | | 5.270449232438 6 | 0.266608906268 | | |
| 34 | 14.331090213438 | 0.065053227359 | | | 5.270449232438 6 | 0.251865285692 | | |
| 35 | 14.483692423834 | 8.29000000e-005 | | | 5.289581125 | 0.386107151558 | | |
| 36 | 15.197117884067 | 0.144946992051 | | | 5.289581125 | 0.386787543579 | | |

Run 2, Data Delay within the 2nd LAN

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : ttGravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ttGravPa... |
|---|---|---|---|---|---|---|---|---|
| 37 | 15.22053922503 | 8.29000000e-005 | | | 6.623409148620 3 | 0.3557901175158 | | |
| 38 | 15.04690470407 | 8.29000000e-005 | | | 6.623409148620 3 | 0.3475006115 4 | | |
| 39 | 16.0179620 | 6.106258467281 1 | | | 6.912770461514 9 | 0.3475047565 4 | | |
| 40 | 16.727151173999 | 8.29000000e-005 | | | 6.912770461514 9 | 0.3309569110957 | | |
| 41 | 21.4292023 | 8.416169966449 | | | 7.036132062640 8 | 0.3309609587048 | | |
| 42 | 22.177224855767 | 8.29000000e-005 | | | 7.036132062640 8 | 0.3159171833091 | | |
| 43 | 22.753106533032 | 8.318105521960 | | | 7.059903563512 7 | 0.3159209514939 | | |
| 44 | 23.25641153 3032 | 0.329408965815 | | | 7.059903563512 7 | 0.3021852579478 | | |
| 45 | 23.293599383032 | 0.3949601858844 | | | 7.92969485 | 0.5364498258478 | | |
| 46 | 24.189550582741 | 8.29000000e-005 | | | 7.92969485 | 0.5140877495791 | | |
| 47 | 24.294161388438 | 0.1307615005162 | | | 8.011341118268 3 | 0.5141012037458 | | |
| 48 | 24.391659454097 | 8.29000000e-005 | | | 8.011341118268 3 | 0.4935071565959 | | |
| 49 | 25.0551298 | 9.819713531 2623 | | | 8.042902807315 4 | 0.4935404715959 | | |
| 50 | 25.431795794821 | 8.29000000e-005 | | | 8.042902807315 4 | 0.4745581457653 | | |
| 51 | 25.699730775 | 0.1475958877387 | | | 8.406829853969 4 | 0.4745611242259 | | |
| 52 | 25.443770785438 | 0.1386303517265 | | | 8.406829853969 4 | 0.4569348891148 | | |
| 53 | 25.462484515875 | 8.29000000e-005 | | | 8.455605725 | 0.4680672917143 | | |
| 54 | 27.258277275039 | 21.218836003199 | | | 8.455605725 | 0.4512927465817 | | |
| 55 | 27.444498332553 | 8.29000000e-005 | | | 8.582202900415 2 | 0.4512957082959 | | |
| 56 | 27.954185189438 | 0.1542771197019 | | | 8.582202900415 2 | 0.4357337852392 | | |
| 57 | 28.912441598639 | 8.29000000e-005 | | | 8.63035035 | 0.6525248174626 | | |
| 58 | 30.026292225 | 23.325090573421 | | | 8.63035035 | 0.6207739902209 | | |
| 59 | 30.074929225 | 11.811146595467 | | | 8.667774877034 | 0.6207757535542 | | |
| 60 | 30.298158507382 | 8.29000000e-005 | | | 8.667774877034 | 0.6104291163428 | | |
| 61 | 32.347196592021 | 8.29000000e-005 | | | 8.68537235 | 0.6323147352468 | | |
| 62 | 32.978716428438 | 0.1283374091066 | | | 8.68537235 | 0.6135239497734 | | |
| 63 | 33.404888105394 | 8.29000000e-005 | | | 8.801741499354 | 0.6135252403954 | | |
| 64 | 35.285294563438 | 0.1989075151546 | | | 8.801741499354 | 0.5949034638141 | | |
| 65 | 37.304560163438 | 0.4183289703792 | | | 9.01537235 | 0.6018828851137 | | |
| 66 | 37.7232231 | 0.1219836318477 | | | 9.01537235 | 0.5841804279044 | | |
| 67 | 37.7969356 | 0.1736421326279 | | | 9.464164310883 | 0.5841828661397 | | |
| 68 | 37.989972921 78 | 8.29000000e-005 | | | 9.464164310883 | 0.5674919271072 | | |
| 69 | 39.5929981 | 0.1870818568814 | | | 10.134659293586 | 0.5699938861603 | | |
| 70 | 39.844079403512 | 8.29000000e-005 | | | 10.134659293586 | 0.5541605282114 | | |
| 71 | 40.297908975 | 0.0627128034226 | | | 10.644886723399 | 0.5541628309892 | | |
| 72 | 40.578316277226 | 8.29000000e-005 | | | 10.644886723399 | 0.5391854671787 | | |
| 73 | 40.8509331088438 | 0.1704484478844 | | | 10.860977885369 | 0.5391878977197 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : ttGravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ttGravPa... |
|---|---|---|---|---|---|---|---|---|
| 74 | 40.856790315604 | 8.29000000e-005 | | | 10.860977885369 | 0.5249985477792 | | |
| 75 | 41.115548257446 | 0.0551408 | | | 11.010719428412 | 0.5264496214634 | | |
| 76 | 41.207751555785 | 8.29000000e-005 | | | 11.010719428412 | 0.5129509132208 | | |
| 77 | 41.65499505 | 15.538246500276 | | | 11.204205038353 | 0.5129530388618 | | |
| 78 | 41.727795605 | 26.068194355589 | | | 11.204205038353 | 0.5001292128900 | | |
| 79 | 41.759442199429 | 8.29000000e-005 | | | 11.593299643586 | 0.5064029862954 | | |
| 80 | 43.047027710438 | 0.0883490757235 | | | 11.593299643586 | 0.4941404744346 | | |
| 81 | 43.868591898853 | 8.29000000e-005 | | | 11.720362375 | 0.6077382876053 | | |
| 82 | 44.049922612553 | 0.2058277092399 | | | 11.720362375 | 0.5932683283766 | | |
| 83 | 44.326996866296 | 8.29000000e-005 | | | 11.926244639438 | 0.5980494793929 | | |
| 84 | 46.507272975 | 18.142730135224 | | | 11.926244639438 | 0.5841403752211 | | |
| 85 | 46.660087897364 | 0.4253302407107 | | | 12.007807138438 | 0.5868778145262 | | |
| 86 | 46.639268625 | 29.050427461665 | | | 12.007807138438 | 0.5735396823779 | | |
| 87 | 46.617469427762 | 8.29000000e-005 | | | 12.349836503513 | 0.5735415664688 | | |
| 88 | 47.850657563438 | 0.0506137153952 | | | 12.349836503513 | 0.5607961983251 | | |
| 89 | 48.0803044352 | 8.29000000e-005 | | | 13.1029761 | 0.6858313212185 | | |
| 90 | 48.194592925 | 37.346406244823 | | | 13.1029761 | 0.6709219445703 | | |
| 91 | 48.994470122342 | 8.29000000e-005 | | | 13.163759869463 | 0.6709237468442 | | |
| 92 | 52.523354725 | 21.251542608316 | | | 13.163759869463 | 0.6565487735071 | | |
| 93 | 52.882183553853 | 8.29000000e-005 | | | 13.230591439438 | 0.7794786749403 | | |
| 94 | 54.43810855 | 21.842317825656 | | | 13.230591439438 | 0.7632395358317 | | |
| 95 | 55.085442185453 | 8.29000000e-005 | | | 14.331090210438 | 0.7646948114618 | | |
| 96 | 55.769297210438 | 0.3598052231138 | | | 14.331090210438 | 0.7489908357079 | | |
| 97 | 55.267482187234 | 8.29000000e-005 | | | 14.483592423834 | 0.7489925275446 | | |
| 98 | 57.751804225 | 22.814817529095 | | | 14.483592423834 | 0.7340126576937 | | |
| 99 | 57.929812142375 | 8.29000000e-005 | | | 14.757215278116 | 0.7340143349937 | | |
| 100 | 58.329497688438 | 0.0838202985425 | | | 14.757215278116 | 0.7196218970527 | | |
| 101 | 58.682295775 | 0.5199484705945 | | | 14.928092912306 | 0.7196235225429 | | |
| 102 | 58.777874175 | 23.129260052885 | | | 14.928092912306 | 0.7057946085476 | | |
| 103 | 58.858838238116 | 8.29000000e-005 | | | 15.122117385057 | 0.7085604918983 | | |
| 104 | 60.307527895403 | 0.1036070008213 | | | 15.122117385057 | 0.6951914260134 | | |
| 105 | 60.805732738438 | 0.1031799984468 | | | 15.320053922503 | 0.6951929901644 | | |
| 106 | 61.700117177371 | 8.29000000e-005 | | | 15.320053922503 | 0.6823190459021 | | |
| 107 | 64.035683429797 | 8.29000000e-005 | | | 15.778993197025 | 0.6823205810872 | | |
| 108 | 64.308331125 | 25.267000463197 | | | 15.778993197025 | 0.6699147523402 | | |
| 109 | 64.359284283584 | 8.29000000e-005 | | | 16.046604134007 | 0.6699162596129 | | |
| 110 | 65.277171105 | 25.790409278888 | | | 16.046604134007 | 0.6579634987677 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 490 | 313.2593823644 | 49.513640085318 | | | 87.287704494714 | 3.7768033661743 | | |
| 491 | 313.5619620831 4 | 96.878754412979 | | | 87.704367989217 | 3.7768037031662 | | |
| 492 | 313.8350250364 4 | 0.27137597653 03 | | | 87.704367989217 | 3.7815129999146 | | |
| 493 | 313.8901282253 | 8.29000000e-005 | | | 87.802778767871 | 3.7615133355421 | | |
| 494 | 314.1042804250 2 | 48.775182402656 | | | 87.802778767871 | 3.74634594306 | | |
| 495 | 314.2074457849 1 | 8.29000000e-005 | | | 89.205218839439 | 3.7503125615279 | | |
| 496 | 314.5518942634 6 | 0.0820130563958 | | | 89.205218839439 | 3.7352510552568 | | |
| 497 | 314.7735529534 6 | 0.1345181706835 | | | 89.315242639439 | 3.7362276219153 | | |
| 498 | 315.0017668235 | 8.29000000e-005 | | | 89.315242639439 | 3.7212926714276 | | |
| 499 | 315.9463294346 | 0.1909846103647 | | | 89.490713791891 | 3.7212930030276 | | |
| 500 | 316.0722862252 | 8.29000000e-005 | | | 89.490713791891 | 3.7064671044936 | | |
| 501 | 316.9734748384 6 | 0.6407297085213 | | | 90.000114963439 | 3.7064675819535 | | |
| 502 | 317.0731549102 1 | 8.29000000e-005 | | | 90.000114963439 | 3.6917593772633 | | |
| 503 | 317.3593883134 6 | 0.4827346901225 | | | 90.213186675001 | 3.8299637773675 | | |
| 504 | 318.8664712384 2 | 8.29000000e-005 | | | 90.213186675001 | 3.8148255830619 | | |
| 505 | 320.1448752134 6 | 0.4147265998304 | | | 90.378555500001 | 3.9584065058194 | | |
| 506 | 320.1814517642 3 | 8.29000000e-005 | | | 90.378555500001 | 3.9408201102054 | | |
| 507 | 320.8377297250 2 | 100.76412011932 | | | 90.877480756572 | 3.9408304284319 | | |
| 508 | 320.9255873234 3 | 8.29000000e-005 | | | 90.877480756572 | 3.9253761914577 | | |
| 509 | 322.3046710500 2 | 51.583792346146 | | | 92.630174840847 | 3.9253761166557 | | |
| 510 | 322.4359214083 | 8.29000000e-005 | | | 92.630174840847 | 3.9100430146379 | | |
| 511 | 324.0580671809 5 | 0.3574074389687 | | | 92.933000659028 | 3.9100430388356 | | |
| 512 | 324.4005173119 1 | 8.29000000e-005 | | | 92.933000659028 | 3.8948291519522 | | |
| 513 | 324.6078893095 | 49.137469571788 | | | 92.964386733671 | 3.8948294846203 | | |
| 514 | 324.7653930721 | 8.29000000e-005 | | | 92.964386733671 | 3.8797332462082 | | |
| 515 | 325.4244613209 5 | 0.2268882634756 | | | 93.415995295197 | 3.8797335875526 | | |
| 516 | 325.5421041648 1 | 8.29000000e-005 | | | 93.415995295197 | 3.8647539012421 | | |
| 517 | 325.8005216059 5 | 0.1383356913535 | | | 93.490139800001 | 4.0052987582807 | | |
| 518 | 325.8558463059 5 | 0.1308638078887 | | | 93.490139800001 | 3.9898937630565 | | |
| 519 | 325.9658463059 5 | 0.2101656641758 | | | 94.009218375001 | 3.9927942001043 | | |
| 520 | 326.4570277134 6 | 0.0893952427407 | | | 94.009218375001 | 3.9774961138035 | | |
| 521 | 326.9201783946 9 | 8.29000000e-005 | | | 95.361732502324 | 3.9774964558595 | | |
| 522 | 327.4402650122 1 | 0.0544794 | | | 95.361732502324 | 3.9623151714776 | | |
| 523 | 327.9187030176 3 | 0.0551408000001 | | | 95.461405875001 | 3.9641434864875 | | |
| 524 | 327.9235655000 2 | 48.070104038891 | | | 95.461405875001 | 3.9480707075275 | | |
| 525 | 328.1439842511 | 8.29000000e-005 | | | 95.660358747836 | 3.9480710227266 | | |
| 526 | 328.9044788534 6 | 0.0453379927178 | | | 95.660358747836 | 3.9341174003778 | | |

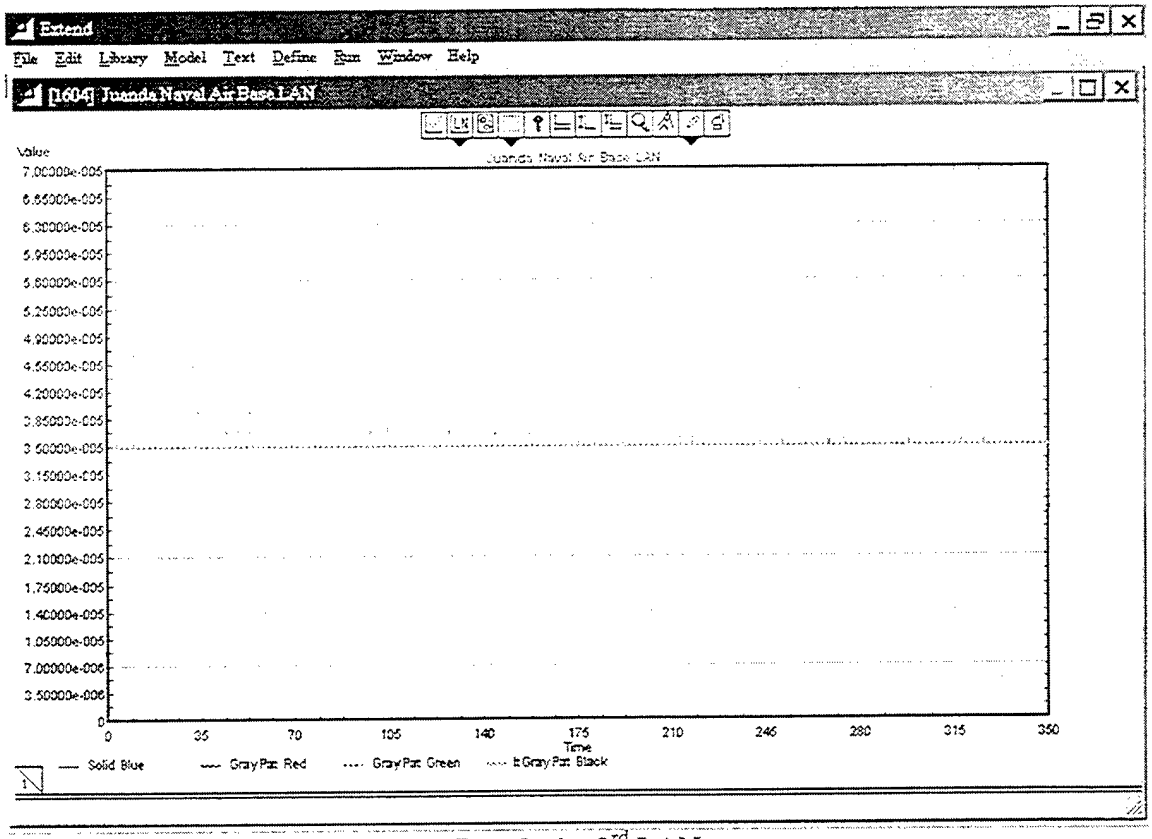
Extend

File Edit Library Model Text Define Run Window Help

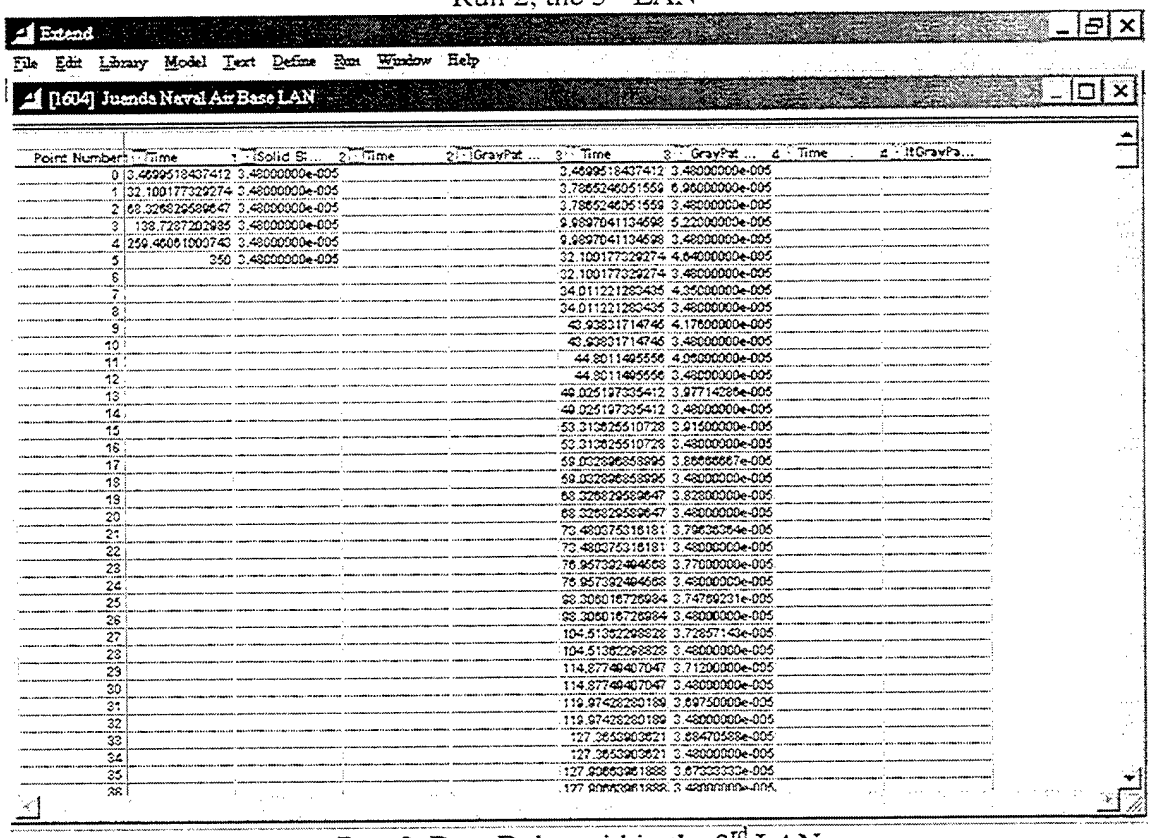
[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 527 | 328.9483196881 5 | 8.29000000e-005 | | | 95.663009343123 | 3.9341127043929 | | |
| 528 | 329.3873411723 8 | 0.0914251999999 | | | 95.663009343123 | 3.9192670259613 | | |
| 529 | 329.4494287500 2 | 97.68761879618 | | | 97.432146529589 | 3.9192673387914 | | |
| 530 | 329.7797174819 5 | 8.29000000e-005 | | | 97.432146529589 | 3.9045302510516 | | |
| 531 | 331.0743585500 2 | 146.70756461244 | | | 98.003959099078 | 3.9045335527053 | | |
| 532 | 331.9225679730 9 | 8.29000000e-005 | | | 98.003959099078 | 3.8899098414971 | | |
| 533 | 333.3924219304 6 | 0.3655202051573 | | | 98.949434597302 | 3.8899101151984 | | |
| 534 | 333.6590630915 | 8.29000000e-005 | | | 98.949434597302 | 3.8753955618547 | | |
| 535 | 334.6408527889 | 0.0544794 | | | 98.979858434415 | 3.8753958711193 | | |
| 536 | 334.7222753662 | 8.29000000e-005 | | | 98.979858434415 | 3.8609891950919 | | |
| 537 | 335.6740567461 9 | 0.0551408000001 | | | 99.389312275002 | 3.8612560549512 | | |
| 538 | 335.7650572592 4 | 8.29000000e-005 | | | 99.389312275002 | 3.8469551065995 | | |
| 539 | 338.0565771209 8 | 0.0551408000001 | | | 99.525087831096 | 3.8471593317847 | | |
| 540 | 338.7161613017 4 | 0.0729523000001 | | | 99.525087831096 | 3.8329631718888 | | |
| 541 | 339.0469534172 9 | 8.29000000e-005 | | | 100.17376213904 | 3.8329634777929 | | |
| 542 | 340.8264797250 2 | 48.954823341919 | | | 100.17376213904 | 3.8188871700301 | | |
| 543 | 340.9049244075 4 | 8.29000000e-005 | | | 101.01562035 | 3.9542037971092 | | |
| 544 | 342.3377965000 3 | 49.490025232767 | | | 101.01562035 | 3.9496829040795 | | |
| 545 | 343.1592139897 1 | 8.29000000e-005 | | | 101.67267575669 | 3.9496832977425 | | |
| 546 | 343.1712344634 6 | 97.220386339426 | | | 101.67267575669 | 3.9352683065246 | | |
| 547 | 343.3556478886 | 8.29000000e-005 | | | 101.81660609583 | 3.9352686080792 | | |
| 548 | 344.3679574934 | 0.0272571 | | | 101.81660609583 | 3.9209585404135 | | |
| 549 | 344.7885778396 8 | 8.29000000e-005 | | | 101.86281022256 | 3.9209588941369 | | |
| 550 | 345.3057886000 3 | 48.358403755566 | | | 101.86281022256 | 3.9067524692526 | | |
| 551 | 345.5141789288 | 8.29000000e-005 | | | 103.52501819944 | 3.9067527698149 | | |
| 552 | 346.7637150133 8 | 0.1278723746085 | | | 103.52501819944 | 3.8925489890026 | | |
| 553 | 346.7284579250 3 | 47.983946829 | | | 103.68881858844 | 3.8925392094464 | | |
| 554 | 346.9721507250 3 | 48.016728739179 | | | 103.68881858844 | 3.8783351943035 | | |
| 555 | 347.0208316587 | 8.29000000e-005 | | | 103.91521273654 | 3.8783354926505 | | |
| 556 | 347.2602584108 7 | 0.0729523000001 | | | 103.91521273654 | 3.8642328583311 | | |
| 557 | 347.6120385000 3 | 48.405985518646 | | | 104.26683485609 | 3.8642331534637 | | |
| 558 | 347.6588357424 7 | 8.29000000e-005 | | | 104.26683485609 | 3.8511298207728 | | |
| 559 | 348.8927950500 3 | 48.452872323794 | | | 104.38253958612 | 3.8511301158442 | | |
| 560 | 348.9748511000 3 | 49.580235255852 | | | 104.38253958612 | 3.8374250274604 | | |
| 561 | 349.4006816049 | 8.29000000e-005 | | | 104.48837068071 | 3.8374253224782 | | |
| 562 | 350 | 8.29000000e-005 | | | 104.48837068071 | 3.8238174312638 | | |
| 563 | | | | | 104.58862377943 | 3.8238177267354 | | |

Run 2, Data Delay within the 2nd LAN

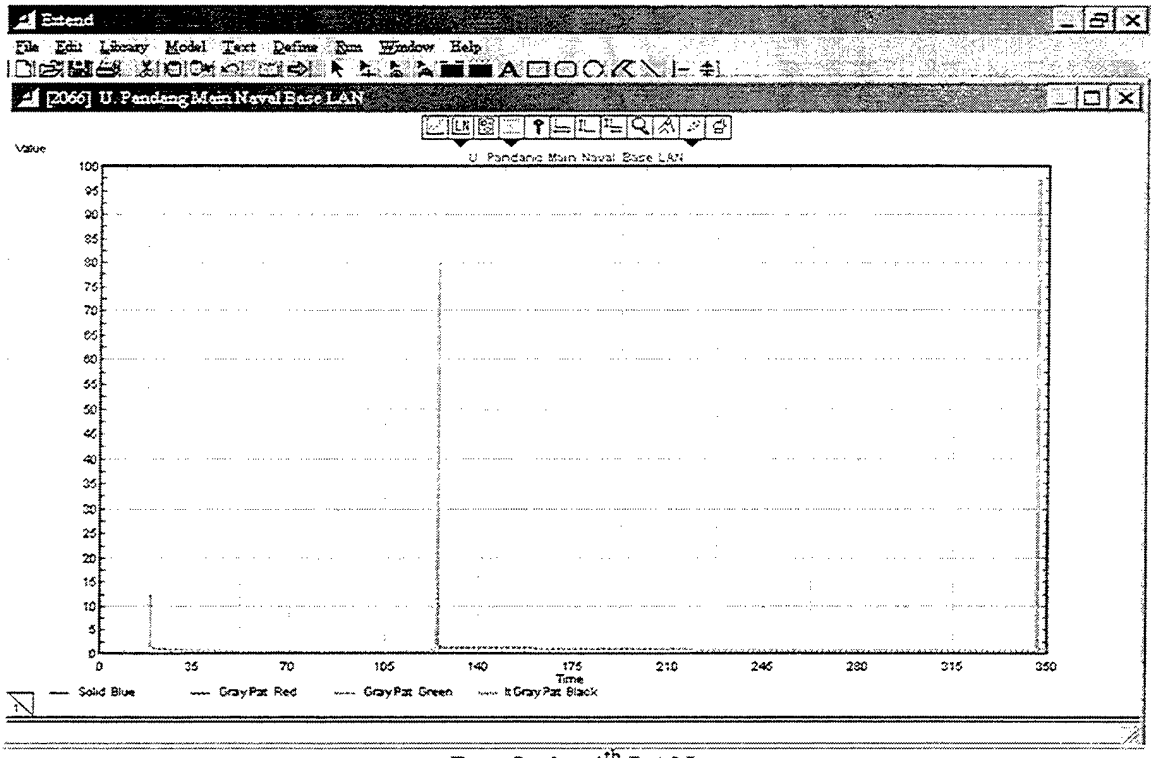



Run 2, the 3rd LAN

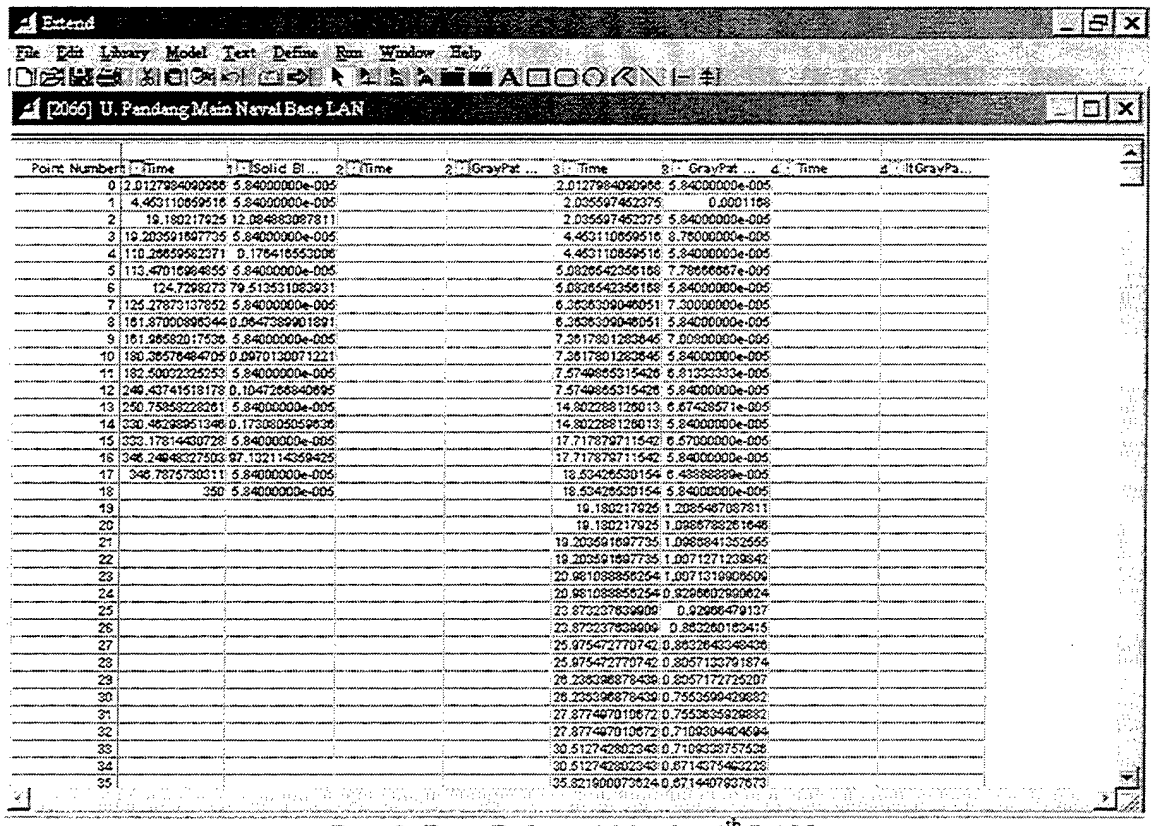



| Point Number | 1 : Time | 1 : ISolid Sl... | 2 : Time | 2 : IGrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 3.4699518437412 | 3.48000000e-005 | | | 3.4699518437412 | 3.48000000e-005 | | |
| 1 | 32.100177329274 | 3.48000000e-005 | | | 3.786524605155 9 | 6.96000000e-005 | | |
| 2 | 68.326829589647 | 3.48000000e-005 | | | 3.786524605155 9 | 3.48000000e-005 | | |
| 3 | 138.7287202985 | 3.48000000e-005 | | | 9.989704113469 8 | 5.22000000e-005 | | |
| 4 | 259.46061000743 | 3.48000000e-005 | | | 9.989704113469 8 | 3.48000000e-005 | | |
| 5 | 350 | 3.48000000e-005 | | | 32.100177329274 | 4.64000000e-005 | | |
| 6 | | | | | 32.100177329274 | 3.48000000e-005 | | |
| 7 | | | | | 34.011221280435 | 4.35000000e-005 | | |
| 8 | | | | | 34.011221280435 | 3.48000000e-005 | | |
| 9 | | | | | 43.93831714746 | 4.17600000e-005 | | |
| 10 | | | | | 43.93831714746 | 3.48000000e-005 | | |
| 11 | | | | | 44.8011495556 | 4.06000000e-005 | | |
| 12 | | | | | 44.8011495556 | 3.48000000e-005 | | |
| 13 | | | | | 49.025197335412 | 3.97714286e-005 | | |
| 14 | | | | | 49.025197335412 | 3.48000000e-005 | | |
| 15 | | | | | 53.310625510728 | 3.91500000e-005 | | |
| 16 | | | | | 53.310625510728 | 3.48000000e-005 | | |
| 17 | | | | | 59.032896858995 | 3.86666667e-005 | | |
| 18 | | | | | 59.032896858995 | 3.48000000e-005 | | |
| 19 | | | | | 68.326829589647 | 3.82800000e-005 | | |
| 20 | | | | | 68.326829589647 | 3.48000000e-005 | | |
| 21 | | | | | 73.480375316181 | 3.79636364e-005 | | |
| 22 | | | | | 73.480375316181 | 3.48000000e-005 | | |
| 23 | | | | | 76.957392494668 | 3.77000000e-005 | | |
| 24 | | | | | 76.957392494668 | 3.48000000e-005 | | |
| 25 | | | | | 88.306016726984 | 3.74769231e-005 | | |
| 26 | | | | | 88.306016726984 | 3.48000000e-005 | | |
| 27 | | | | | 104.51362298828 | 3.72857143e-005 | | |
| 28 | | | | | 104.51362298828 | 3.48000000e-005 | | |
| 29 | | | | | 114.87749407047 | 3.71200000e-005 | | |
| 30 | | | | | 114.87749407047 | 3.48000000e-005 | | |
| 31 | | | | | 119.97428280189 | 3.69750000e-005 | | |
| 32 | | | | | 119.97428280189 | 3.48000000e-005 | | |
| 33 | | | | | 127.3653903621 | 3.68470588e-005 | | |
| 34 | | | | | 127.3653903621 | 3.48000000e-005 | | |
| 35 | | | | | 127.90663961888 | 3.67333333e-005 | | |
| 36 | | | | | 127.90663961888 | 3.48000000e-005 | | |

Run 2, Data Delay within the 3rd LAN

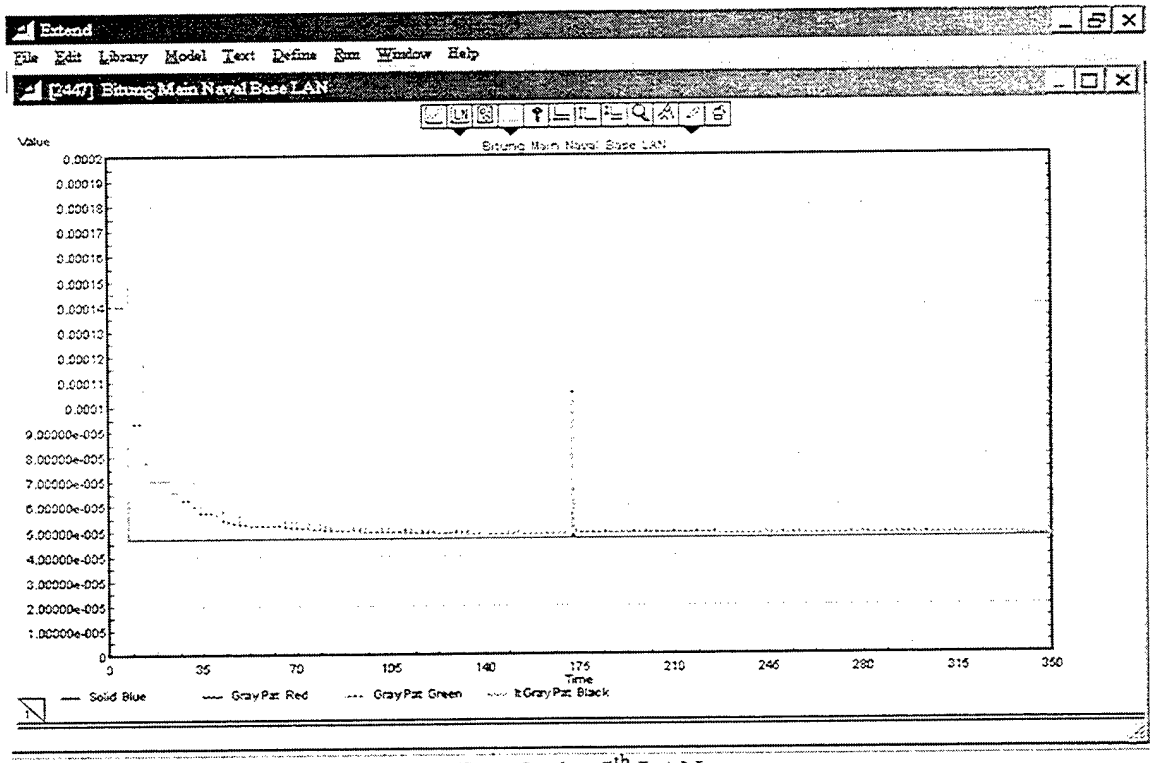



Run 2, the 4th LAN

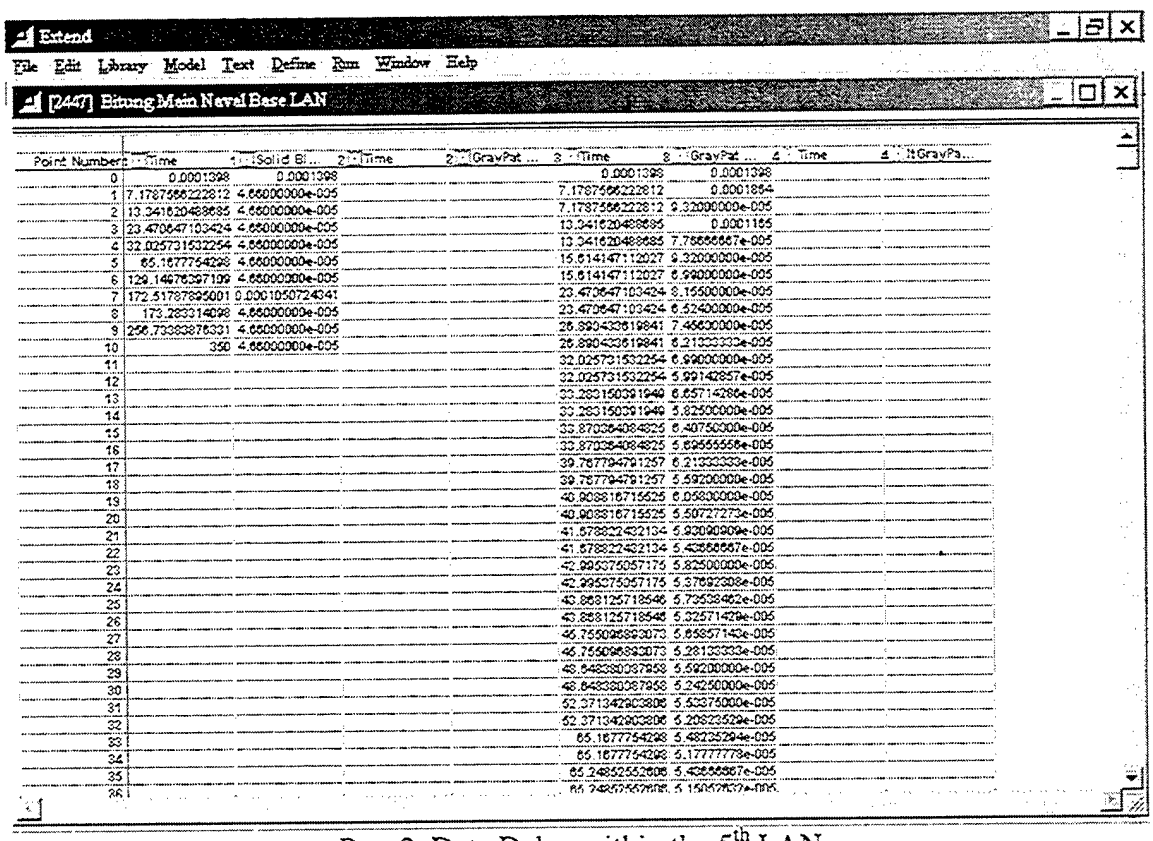



| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 2.0127984090966 | 5.84000000e-005 | | | 2.0127984090966 | 5.84000000e-005 | | |
| 1 | 4.463110659516 | 5.84000000e-005 | | | 2.035597452375 | 0.0001168 | | |
| 2 | 19.180217925 | 12.08488398781 | | | 2.035597452375 | 5.84000000e-005 | | |
| 3 | 19.203591697735 | 5.84000000e-005 | | | 4.463110659516 | 8.75000000e-005 | | |
| 4 | 110.26659582371 | 0.1764165553006 | | | 4.463110659516 | 5.84000000e-005 | | |
| 5 | 113.47016984655 | 5.84000000e-005 | | | 5.08265423561168 | 7.78666667e-005 | | |
| 6 | 124.7298273 | 79.513531983931 | | | 5.08265423561168 | 5.84000000e-005 | | |
| 7 | 125.27870137852 | 5.84000000e-005 | | | 6.35653094046051 | 7.30000000e-005 | | |
| 8 | 151.37000895344 | 0.08473899018931 | | | 6.35653094046051 | 5.84000000e-005 | | |
| 9 | 151.96582017536 | 5.84000000e-005 | | | 7.36178012863646 | 7.00800000e-005 | | |
| 10 | 180.36576484705 | 0.09701309971221 | | | 7.36178012863646 | 5.84000000e-005 | | |
| 11 | 182.50002325253 | 5.84000000e-005 | | | 7.57498653154426 | 6.81333333e-005 | | |
| 12 | 249.43741518178 | 0.1047266940695 | | | 7.57498653154426 | 5.84000000e-005 | | |
| 13 | 250.75853228261 | 5.84000000e-005 | | | 14.80228812601 3 | 6.67428571e-005 | | |
| 14 | 330.46298951346 | 0.1730805059636 | | | 14.80228812601 3 | 5.84000000e-005 | | |
| 15 | 332.17814430728 | 5.84000000e-005 | | | 17.71787971154 2 | 6.57000000e-005 | | |
| 16 | 346.24948327503 | 97.13211439942 5 | | | 17.71787971154 2 | 5.84000000e-005 | | |
| 17 | 346.78757303 11 | 5.84000000e-005 | | | 18.53426530154 | 6.48888889e-005 | | |
| 18 | 350 | 5.84000000e-005 | | | 18.53426530154 | 5.84000000e-005 | | |
| 19 | | | | | 19.180217925 | 1.20854687087811 | | |
| 20 | | | | | 19.180217925 | 1.09857882616646 | | |
| 21 | | | | | 19.203591697735 | 1.09858413525555 | | |
| 22 | | | | | 19.203591697735 | 1.00712712398 42 | | |
| 23 | | | | | 20.981088856254 | 1.00713199006509 | | |
| 24 | | | | | 20.981088856254 | 0.9296602990624 | | |
| 25 | | | | | 23.870237839909 | 0.9296647913 7 | | |
| 26 | | | | | 23.870237839909 | 0.8632601534 15 | | |
| 27 | | | | | 25.975472770742 | 0.8632643349436 | | |
| 28 | | | | | 25.975472770742 | 0.8057132791874 | | |
| 29 | | | | | 26.236396878439 | 0.8057172725207 | | |
| 30 | | | | | 26.236396878439 | 0.7553599429882 | | |
| 31 | | | | | 27.877497010672 | 0.7553635929882 | | |
| 32 | | | | | 27.877497010672 | 0.7109304404594 | | |
| 33 | | | | | 30.512742802343 | 0.7109328757526 | | |
| 34 | | | | | 30.512742802343 | 0.6714375462228 | | |
| 35 | | | | | 35.821900073524 | 0.6714407937673 | | |

Run 2, Data Delay within the 4th LAN

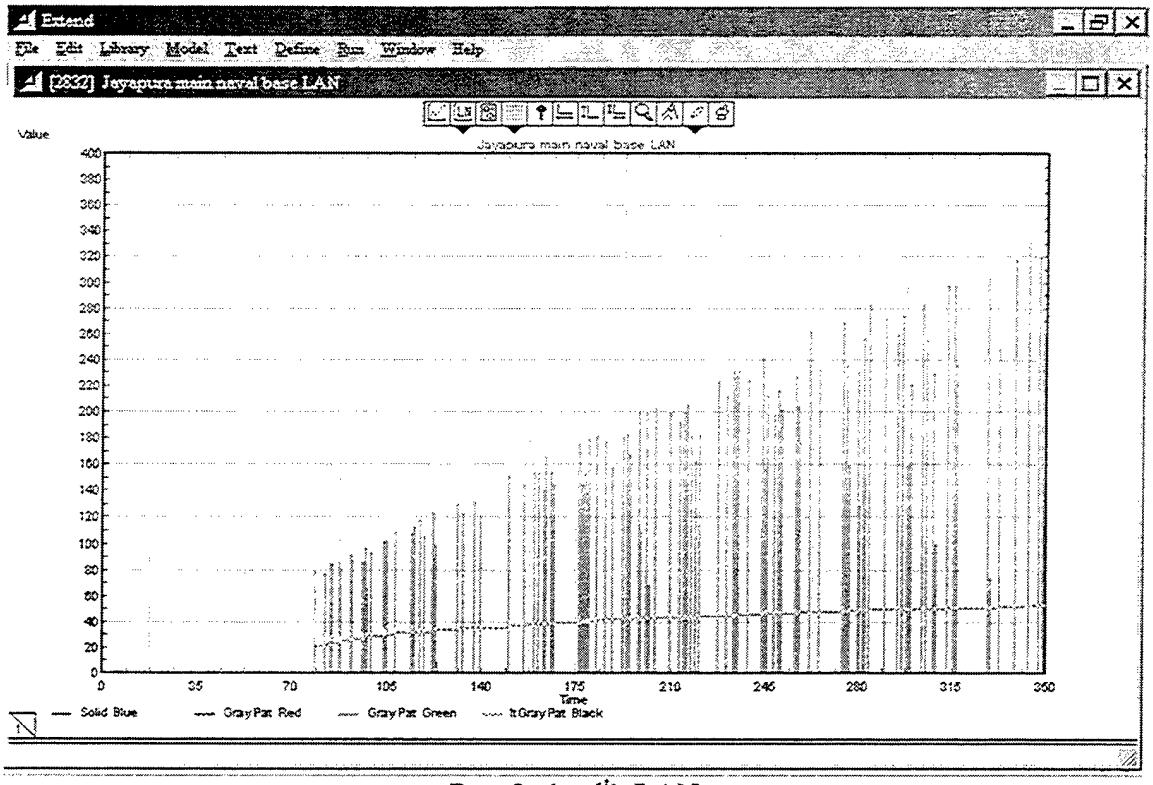



Run 2, the 5th LAN

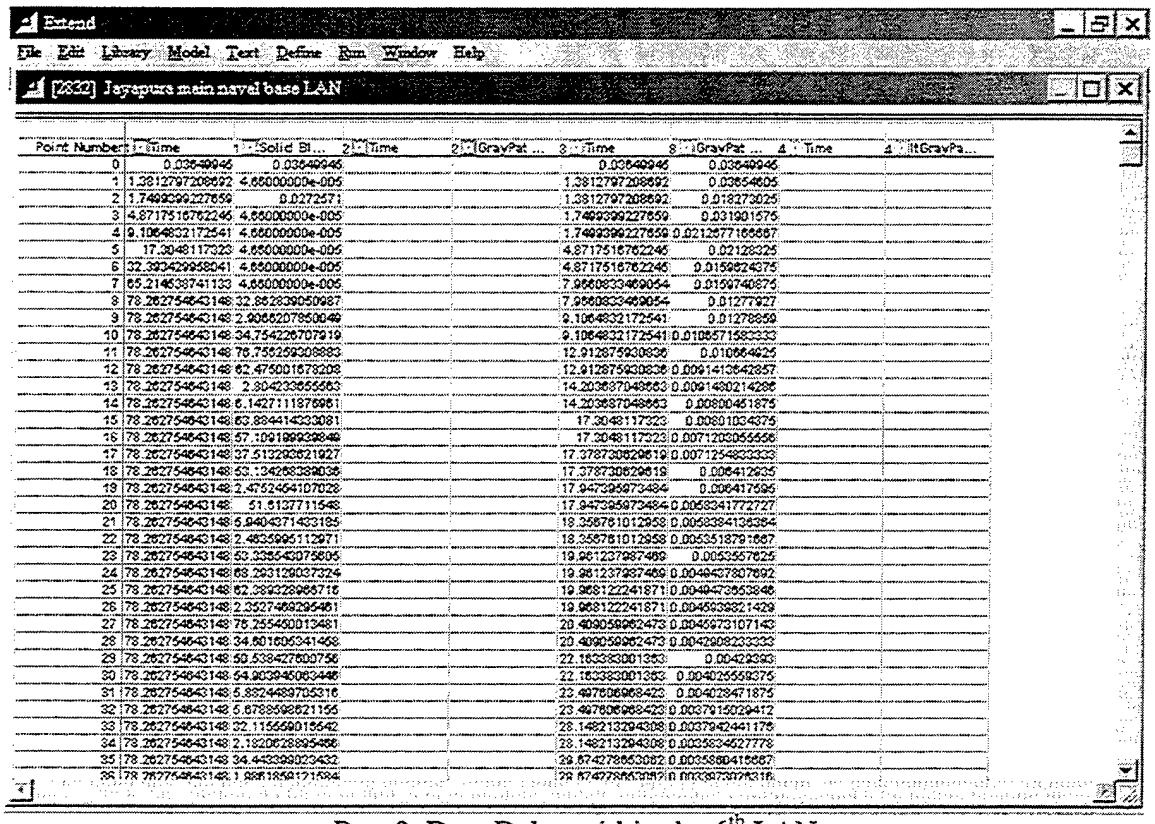



| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.0001398 | 0.0001398 | | | 0.0001398 | 0.0001398 | | |
| 1 | 7.178756622812 | 4.66000000e-005 | | | 7.178756622812 | 0.0001854 | | |
| 2 | 13.041620488685 | 4.66000000e-005 | | | 7.178756622812 | 9.32000000e-005 | | |
| 3 | 23.470647103424 | 4.66000000e-005 | | | 13.041620488685 | 0.0001165 | | |
| 4 | 32.025731532254 | 4.66000000e-005 | | | 13.041620488685 | 7.76666667e-005 | | |
| 5 | 65.1677754298 | 4.66000000e-005 | | | 15.614147112027 | 9.32000000e-005 | | |
| 6 | 129.14676397199 | 4.66000000e-005 | | | 15.614147112027 | 6.99000000e-005 | | |
| 7 | 172.51787895001 | 0.00010507243 41 | | | 23.470647103424 | 8.15500000e-005 | | |
| 8 | 173.283314098 | 4.66000000e-005 | | | 23.470647103424 | 6.52400000e-005 | | |
| 9 | 256.73383876331 | 4.66000000e-005 | | | 26.890433619841 | 7.46600000e-005 | | |
| 10 | 350 | 4.66000000e-005 | | | 26.890433619841 | 6.21333333e-005 | | |
| 11 | | | | | 32.025731532254 | 6.99000000e-005 | | |
| 12 | | | | | 32.025731532254 | 5.99142857e-005 | | |
| 13 | | | | | 33.283150391949 | 6.65714286e-005 | | |
| 14 | | | | | 33.283150391949 | 5.82500000e-005 | | |
| 15 | | | | | 33.870364084825 | 6.40750000e-005 | | |
| 16 | | | | | 33.870364084825 | 5.69555556e-005 | | |
| 17 | | | | | 39.767794791257 | 6.21333333e-005 | | |
| 18 | | | | | 39.767794791257 | 5.59200000e-005 | | |
| 19 | | | | | 40.908816715525 | 6.05800000e-005 | | |
| 20 | | | | | 40.908816715525 | 5.50727273e-005 | | |
| 21 | | | | | 41.578822432134 | 5.93090909e-005 | | |
| 22 | | | | | 41.578822432134 | 5.40666667e-005 | | |
| 23 | | | | | 42.995375057175 | 5.82500000e-005 | | |
| 24 | | | | | 42.995375057175 | 5.57692308e-005 | | |
| 25 | | | | | 43.868125718546 | 5.70538462e-005 | | |
| 26 | | | | | 43.868125718546 | 5.32571429e-005 | | |
| 27 | | | | | 46.755096893073 | 5.65857142e-005 | | |
| 28 | | | | | 46.755096893073 | 5.28133333e-005 | | |
| 29 | | | | | 48.648380087958 | 5.59200000e-005 | | |
| 30 | | | | | 48.648380087958 | 5.24250000e-005 | | |
| 31 | | | | | 52.371342903806 | 5.53375000e-005 | | |
| 32 | | | | | 52.371342903806 | 5.20823529e-005 | | |
| 33 | | | | | 65.1677754298 | 5.48235294e-005 | | |
| 34 | | | | | 65.1677754298 | 5.17777778e-005 | | |
| 35 | | | | | 65.248525526 06 | 5.40666667e-005 | | |
| 36 | | | | | 65.248525526 06 | 5.15052632e-005 | | |

Run 2, Data Delay within the 5th LAN




Run 2, the 6th LAN




| Point Number | Time | Solid Bl... | Time | GrayPat ... | Time | GrayPat ... | Time | ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.03549946 | 0.03549946 | | | 0.03549946 | 0.03549946 | | |
| 1 | 1.381279720869 2 | 4.65000000e-005 | | | 1.381279720869 2 | 0.03654605 | | |
| 2 | 1.749939922765 9 | 0.0272571 | | | 1.381279720869 2 | 0.018273025 | | |
| 3 | 4.871751576224 5 | 4.65000000e-005 | | | 1.749939922765 9 | 0.031901575 | | |
| 4 | 9.106483217254 1 | 4.65000000e-005 | | | 1.749939922765 9 | 0.021257716666 7 | | |
| 5 | 17.30481173 23 | 4.65000000e-005 | | | 4.871751576224 5 | 0.02128325 | | |
| 6 | 32.39342995804 1 | 4.65000000e-005 | | | 4.871751576224 5 | 0.015952437 5 | | |
| 7 | 65.21453874113 3 | 4.65000000e-005 | | | 7.956083346905 4 | 0.015974087 5 | | |
| 8 | 78.26275464314 8 | 32.86283905098 7 | | | 7.956083346905 4 | 0.01277927 | | |
| 9 | 78.26275464314 8 | 2.906620785004 9 | | | 9.106483217254 1 | 0.01278859 | | |
| 10 | 78.26275464314 8 | 34.75422670791 9 | | | 9.106483217254 1 | 0.010857158333 | | |
| 11 | 78.26275464314 8 | 76.75525930888 3 | | | 12.91287593083 6 | 0.01066425 | | |
| 12 | 78.26275464314 8 | 62.47500167920 8 | | | 12.91287593083 6 | 0.009141064285 7 | | |
| 13 | 78.26275464314 8 | 2.304233655563 | | | 14.20368704866 3 | 0.009148021428 6 | | |
| 14 | 78.26275464314 8 | 6.142711187596 1 | | | 14.20368704866 3 | 0.00800451875 | | |
| 15 | 78.26275464314 8 | 63.88441433081 | | | 17.30481173 23 | 0.00801034375 | | |
| 16 | 78.26275464314 8 | 57.10919993984 9 | | | 17.30481173 23 | 0.007120055556 | | |
| 17 | 78.26275464314 8 | 37.51329821927 | | | 17.37873062961 9 | 0.007125483333 | | |
| 18 | 78.26275464314 8 | 53.13426838936 | | | 17.37873062961 9 | 0.00641293 5 | | |
| 19 | 78.26275464314 8 | 2.475246107028 | | | 17.94739597348 4 | 0.00641759 5 | | |
| 20 | 78.26275464314 8 | 51.51377115 48 | | | 17.94739597348 4 | 0.005834177272 7 | | |
| 21 | 78.26275464314 8 | 5.940437143318 5 | | | 18.35676101295 8 | 0.005839413636 4 | | |
| 22 | 78.26275464314 8 | 2.483599511297 1 | | | 18.35676101295 8 | 0.005351879166 7 | | |
| 23 | 78.26275464314 8 | 53.33554037560 5 | | | 19.96123798746 9 | 0.00525576 25 | | |
| 24 | 78.26275464314 8 | 68.29312903732 4 | | | 19.96123798746 9 | 0.004457807692 | | |
| 25 | 78.26275464314 8 | 62.28932866715 | | | 19.96812224187 1 | 0.004947365384 6 | | |
| 26 | 78.26275464314 8 | 2.352746929546 1 | | | 19.96812224187 1 | 0.004593821429 | | |
| 27 | 78.26275464314 8 | 76.25545001348 1 | | | 20.40905996247 3 | 0.004597310714 3 | | |
| 28 | 78.26275464314 8 | 34.60160534145 8 | | | 20.40905996247 3 | 0.004298233333 | | |
| 29 | 78.26275464314 8 | 50.53842760075 6 | | | 22.16338300135 3 | 0.00429393 | | |
| 30 | 78.26275464314 8 | 54.90394506344 6 | | | 22.16338300135 3 | 0.004025559375 | | |
| 31 | 78.26275464314 8 | 5.832448970531 6 | | | 23.49760696842 3 | 0.004028471875 | | |
| 32 | 78.26275464314 8 | 5.678859852115 5 | | | 23.49760696842 3 | 0.003791502941 2 | | |
| 33 | 78.26275464314 8 | 32.11556901554 2 | | | 28.14821329430 8 | 0.003794244117 6 | | |
| 34 | 78.26275464314 8 | 2.182062889546 6 | | | 28.14821329430 8 | 0.003583462777 8 | | |
| 35 | 78.26275464314 8 | 34.44339902343 2 | | | 29.67427865308 2 | 0.003586041566 7 | | |
| 36 | 78.26275464314 8 | 1.886185691215 4 | | | 29.67427865308 2 | 0.003373078316 | | |

Run 2, Data Delay within the 6th LAN

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 37 | 78.26275464314 8 | 46.31771105309 52 | | | 29.86527569948 | 0.00039975532 | | |
| 38 | 78.26275464314 8 | 34.56857147167 5 | | | 29.86527569948 | 0.0002297675 | | |
| 39 | 78.26275464314 8 | 68.41549540499 | | | 30.31842007801 1 | 0.0002320675 | | |
| 40 | 78.26275464314 8 | 62.23965557128 | | | 30.31842007801 1 | 0.00007881880952 | | |
| 41 | 78.26275464314 8 | 1.9832852831921 | | | 32.99342995804 1 | 0.00038047142 9 | | |
| 42 | 78.26275464314 8 | 32.00951584603 4 | | | 32.99342995804 1 | 0.00294038863 64 | | |
| 43 | 78.26275464314 8 | 61.98781157560 6 | | | 33.01467155515 6 | 0.00294250568 182 | | |
| 44 | 78.26275464314 8 | 1.7035333330405 | | | 33.01467155515 6 | 0.00281467173 91 | | |
| 45 | 78.26275464314 8 | 38.75784088592 | | | 34.44981242429 6 | 0.00281569782 61 | | |
| 46 | 78.26275464314 8 | 68.84773054033 | | | 34.44981242429 6 | 0.00299323958 03 | | |
| 47 | 78.26275464314 8 | 1.7420409462254 | | | 38.80655035482 3 | 0.00270118125 | | |
| 48 | 78.26275464314 8 | 1.6002699910050 | | | 38.80655035482 3 | 0.002590134 | | |
| 49 | 78.26275464314 8 | 50.32828846599 | | | 39.95076174266 | 0.002594498 | | |
| 50 | 78.26275464314 8 | 77.92748586922 | | | 39.95076174266 | 0.00249519038 46 | | |
| 51 | 78.26275464314 8 | 62.05534479002 | | | 40.98195191114 6 | 0.00249589826 23 | | |
| 52 | 78.26275464314 8 | 1.7382213936441 | | | 40.98195191114 6 | 0.00240450185 19 | | |
| 53 | 78.26275464314 8 | 5.5057752871282 | | | 42.50113040457 | 0.00240522777 78 | | |
| 54 | 78.26275464314 8 | 1.4108925305623 | | | 42.50113040457 | 0.00222029107 14 | | |
| 55 | 78.26275464314 8 | 4.8049993892049 | | | 50.76227205667 | 0.00232195535 71 | | |
| 56 | 78.26275464314 8 | 73.17373737342 | | | 50.76227205667 | 0.00224189790 1 | | |
| 57 | 78.26275464314 8 | 1.5871131775890 | | | 51.01813505946 | 0.00224349462 76 | | |
| 58 | 78.26275464314 8 | 55.51385777856 | | | 51.01813505946 | 0.00216871156 67 | | |
| 59 | 78.26275464314 8 | 22.29201432568 8 | | | 55.56360970688 | 0.002170265 | | |
| 60 | 78.26275464314 8 | 4.9557407870628 | | | 55.56360970688 | 0.00210025646 16 | | |
| 61 | 78.26275464314 8 | 51.16999679310 9 | | | 61.58268111707 | 0.00210175967 74 | | |
| 62 | 78.26275464314 8 | 1.2021509209383 | | | 61.58268111707 | 0.00203507968 75 | | |
| 63 | 78.26275464314 8 | 32.72555499820 5 | | | 65.21463874113 3 | 0.00203753592 75 | | |
| 64 | 78.26275464314 8 | 4.8422202948453 | | | 65.21463874113 3 | 0.00197579242 42 | | |
| 65 | 78.26275464314 8 | 62.02258252962 7 | | | 66.19736419948 | 0.00197720454 66 | | |
| 66 | 78.26275464314 8 | 73.40571895538 1 | | | 66.19736419948 | 0.00191905147 05 | | |
| 67 | 78.26275464314 8 | 1.0313976470992 | | | 66.42075266365 4 | 0.00192042205 88 | | |
| 68 | 78.26275464314 8 | 62.17784871414 1 | | | 66.42075266365 4 | 0.00186556285 71 | | |
| 69 | 78.26275464314 8 | 1.0981288048104 | | | 68.46086579439 | 0.00186658942 857 | | |
| 70 | 78.26275464314 8 | 31.40755182077 4 | | | 68.46086579439 | 0.00181502653 89 | | |
| 71 | 78.26275464314 8 | 35.98547039549 1 | | | 68.87583325874 | 0.00181522083 33 | | |
| 72 | 78.26275464314 8 | 1.2511119513683 | | | 68.87583325874 | 0.00176723108 11 | | |
| 73 | 78.26275464314 8 | 1.2518139882376 3 | | | 71.59840404605 4 | 0.00176849405 485 | | |

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 74 | 78.26275464314 8 | 1.5691697098794 | | | 71.59840404605 4 | 0.00172195131 58 | | |
| 75 | 78.26275464314 8 | 31.22802523322 | | | 78.26275464314 8 | 0.86653035052891 | | |
| 76 | 78.26275464314 8 | 75.87939721513 8 | | | 78.26275464314 8 | 0.94302352594 72 | | |
| 77 | 78.26275464314 8 | 34.01828797112 6 | | | 78.26275464314 8 | 1.8575084393134 | | |
| 78 | 78.26275464314 8 | 32.92090946026 | | | 78.26275464314 8 | 3.8775100000735 | | |
| 79 | 78.26275464314 8 | 69.20893342858 6 | | | 78.26275464314 8 | 5.5215889916053 | | |
| 80 | 78.26275464314 8 | 30.92563007269 3 | | | 78.26275464314 8 | 5.5953846141201 | | |
| 81 | 78.26275464314 8 | 9.7793559112 53 | | | 78.26275464314 8 | 5.7570346085302 | | |
| 82 | 78.26275464314 8 | 0.5147442127877 | | | 78.26275464314 8 | 7.4382037067722 | | |
| 83 | 78.26275464314 8 | 4.5314671267818 | | | 78.26275464314 8 | 8.9410773893998 | | |
| 84 | 78.26275464314 8 | 30.82125037579 4 | | | 78.26275464314 8 | 9.9282693268189 | | |
| 85 | 78.26275464314 8 | 0.6778032788019 | | | 78.26275464314 8 | 11.32653954758 3 | | |
| 86 | 78.26275464314 8 | 0.5261317167521 | | | 78.26275464314 8 | 11.3916775847 07 | | |
| 87 | 78.26275464314 8 | 0.8702095078104 | | | 78.26275464314 8 | 12.7496024720059 | | |
| 88 | 78.26275464314 8 | 52.49878132625 9 | | | 78.26275464314 8 | 12.9052620136 05 | | |
| 89 | 78.26275464314 8 | 32.75284832823 7 | | | 78.26275464314 8 | 12.9710935796 91 | | |
| 90 | 78.26275464314 8 | 0.5985468425724 | | | 78.26275464314 8 | 14.3746868152 3 | | |
| 91 | 78.26275464314 8 | 63.00172507809 9 | | | 78.26275464314 8 | 15.1713744247 58 | | |
| 92 | 78.26275464314 8 | 0.5904073635237 | | | 78.26275464314 8 | 17.8136998712 61 | | |
| 93 | 78.26275464314 8 | 68.25494385940 4 | | | 78.26275464314 8 | 17.8756132641 44 | | |
| 94 | 78.26275464314 8 | 0.3735156357351 | | | 78.26275464314 8 | 19.8922035602 92 | | |
| 95 | 78.26275464314 8 | 4.5282420809 01 | | | 78.26275464314 8 | 20.7929041946 07 | | |
| 96 | 78.26275464314 8 | 4.8460996100061 | | | 78.26275464314 8 | 22.1228528196 09 | | |
| 97 | 78.26275464314 8 | 0.7206318963251 | | | 78.26275464314 8 | 23.5677034751 74 | | |
| 98 | 78.26275464314 8 | 4.5524198028316 | | | 78.26275464314 8 | 23.7225047638 72 | | |
| 99 | 78.26275464314 8 | 51.00256632827 | | | 78.26275464314 8 | 23.8719484444 64 | | |
| 100 | 78.26275464314 8 | 30.81613420924 4 | | | 78.26275464314 8 | 24.7170947340 53 | | |
| 101 | 78.26275464314 8 | 0.3773752781754 | | | 78.26275464314 8 | 24.7746174419 83 | | |
| 102 | 78.26275464314 8 | 50.40544235067 5 | | | 78.26275464314 8 | 25.6809225794 41 | | |
| 103 | 78.26275464314 8 | 4.660000000e-005 | | | 78.26275464314 8 | 25.7331907297 61 | | |
| 104 | 82.23179838601 5 | 1.5091325584898 | | | 78.26275464314 8 | 26.9520778503 13 | | |
| 105 | 82.23179838601 5 | 57.88677994819 | | | 78.26275464314 8 | 27.8617770995 67 | | |
| 106 | 82.23179838601 5 | 1.4477147825937 | | | 78.26275464314 8 | 29.5621846733 73 | | |
| 107 | 82.23179838601 5 | 52.84255530552 | | | 78.26275464314 8 | 31.3000692301 39 | | |
| 108 | 82.23179838601 5 | 1.4135850565119 | | | 78.26275464314 8 | 31.3522372603 81 | | |
| 109 | 82.23179838601 5 | 5.1611717102853 | | | 78.26275464314 8 | 32.1953924172 22 | | |
| 110 | 82.23179838601 5 | 68.67960940504 61 | | | 78.26275464314 8 | 33.8256408166 17 | | |

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ttGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 3870 | 343.7258498819 | 0.022089573593 | | | 204.08805395353 | 43.550931875697 | | |
| 3871 | 343.7258498819 | 4.56000000e-005 | | | 204.08805395353 | 43.529284485228 | | |
| 3872 | 347.12624896257 | 49.79145461136 | | | 204.08805395353 | 43.505660638741 | | |
| 3873 | 347.12624896257 | 85.78746529309 | | | 204.08805395353 | 43.483060293553 | | |
| 3874 | 347.12624896257 | 46.85248389318 | | | 204.08805395353 | 43.46048341905 | | |
| 3875 | 347.12624896257 | 15.97711369518 | | | 204.08805395353 | 43.437929976694 | | |
| 3876 | 347.12624896257 | 1.31227201253908 | | | 204.08805395353 | 43.415399930028 | | |
| 3877 | 347.12624896257 | 219.92220249074 | | | 204.08805395353 | 43.392893242659 | | |
| 3878 | 347.12624896257 | 64.2045301224 | | | 204.08805395353 | 43.370409878285 | | |
| 3879 | 347.12624896257 | 60.27825607519 | | | 204.08805395353 | 43.347949800668 | | |
| 3880 | 347.12624896257 | 64.01362460324 | | | 204.08805395353 | 43.325512973644 | | |
| 3881 | 347.12624896257 | 318.57608832415 | | | 204.08805395353 | 43.303099361143 | | |
| 3882 | 347.12624896257 | 1.120349214329 | | | 204.08805395353 | 43.280708927141 | | |
| 3883 | 347.12624896257 | 127.71160017952 | | | 204.08805395353 | 43.258341835705 | | |
| 3884 | 347.12624896257 | 1.04650594235944 | | | 204.08805395353 | 43.235997460976 | | |
| 3885 | 347.12624896257 | 1.03913740070933 | | | 204.08805395353 | 43.213676037166 | | |
| 3886 | 347.12624896257 | 49.74667954553 | | | 204.08805395353 | 43.19137825856 | | |
| 3887 | 347.12624896257 | 49.47460480443 | | | 204.08805395353 | 43.169100179652 | | |
| 3888 | 347.12624896257 | 93.19936156526 | | | 204.08805395353 | 43.146851064479 | | |
| 3889 | 347.12624896257 | 15.69633093558 | | | 204.08805395353 | 43.124621877944 | | |
| 3890 | 347.12624896257 | 59.83782196224 | | | 204.08805395353 | 43.102415584485 | | |
| 3891 | 347.12624896257 | 1.00535299398874 | | | 204.08805395353 | 43.080232148785 | | |
| 3892 | 347.12624896257 | 0.856033530430 5 | | | 204.08805395353 | 43.058071535554 | | |
| 3893 | 347.12624896257 | 15.71060054121 2 | | | 204.08805395353 | 43.035933709558 | | |
| 3894 | 347.12624896257 | 0.90570378625 86 | | | 204.08805395353 | 43.013818835709 | | |
| 3895 | 347.12624896257 | 146.24903473143 | | | 204.08805395353 | 42.991725278937 | | |
| 3896 | 347.12624896257 | 15.83557832540 5 | | | 204.08805395353 | 42.969656604256 | | |
| 3897 | 347.12624896257 | 203.43254604871 | | | 204.08805395353 | 42.947609578752 | | |
| 3898 | 347.12624896257 | 0.87891589994642 | | | 204.08805395353 | 42.925585181585 | | |
| 3899 | 347.12624896257 | 0.83853658525 76 | | | 204.08805395353 | 42.903585185487 | | |
| 3900 | 347.12624896257 | 80.93730704151 3 | | | 204.08805395353 | 42.881608347868 | | |
| 3901 | 347.12624896257 | 0.55079818971 73 | | | 204.34739235922 | 42.903688426466 | | |
| 3902 | 347.12624896257 | 293.26751008947 | | | 204.34739235922 | 42.982109301871 | | |
| 3903 | 347.12624896257 | 15.48033571818 2 | | | 204.34739235922 | 42.985241817687 | | |
| 3904 | 347.12624896257 | 48.47039670307 8 | | | 204.34739235922 | 42.985293488056 | | |
| 3905 | 347.12624896257 | 298.03326806979 | | | 204.34739235922 | 42.985352880374 | | |
| 3906 | 347.12624896257 | 170.85377259457 | | | 204.34739235922 | 42.988390857772 | | |

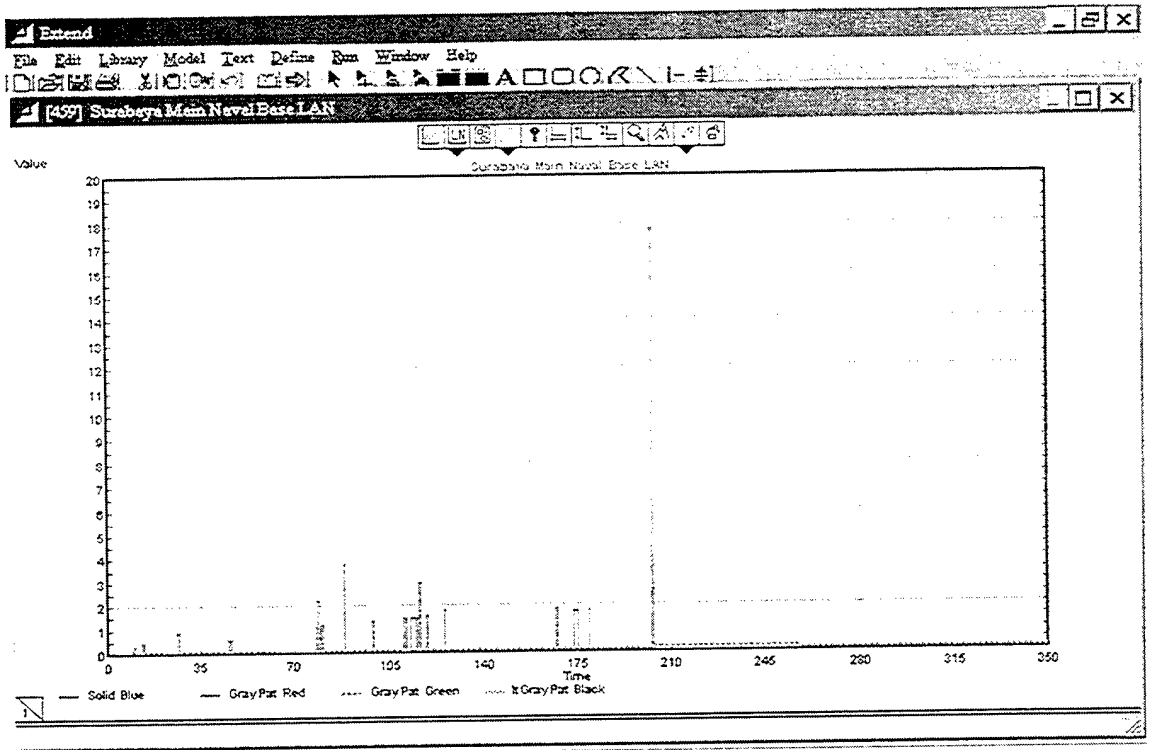
Extend

File Edit Library Model Text Define Run Window Help

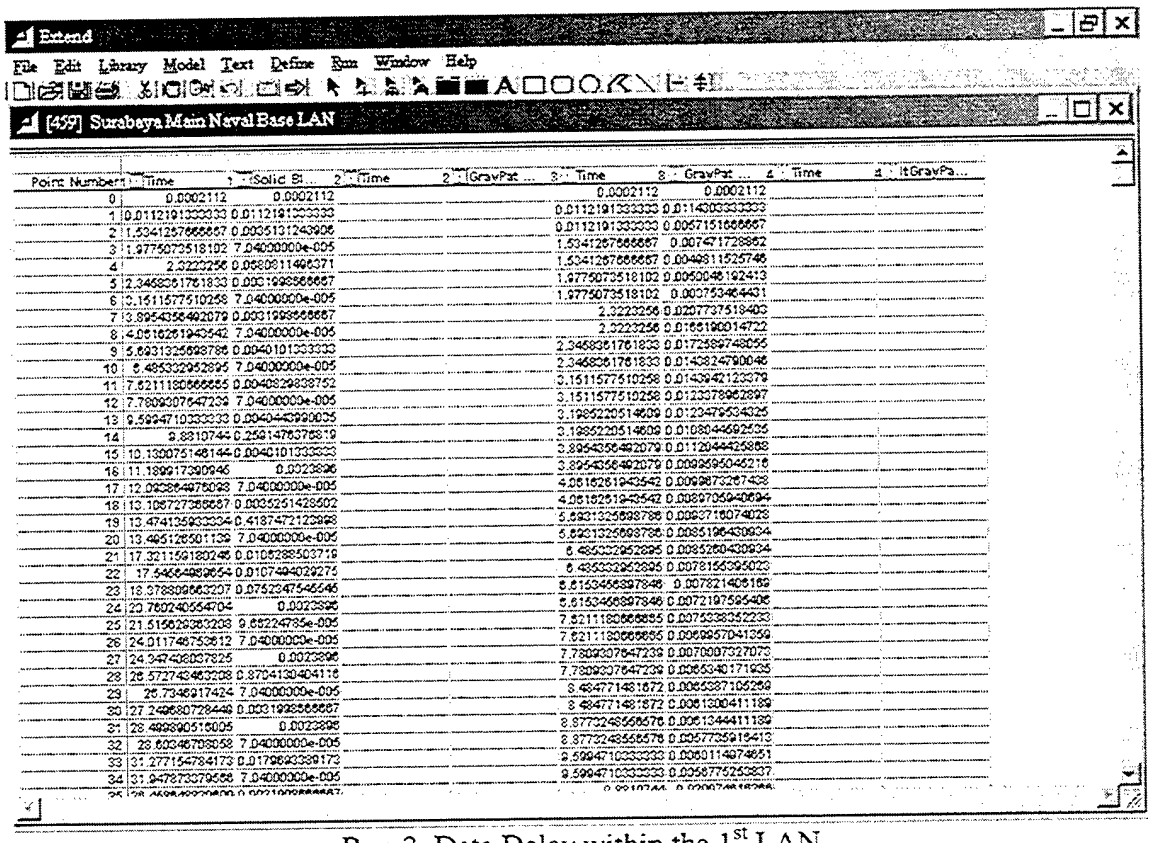
[2832] Jayapura main naval base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ttGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 3906 | 347.12624896257 | 170.85377259457 | | | 204.34739235922 | 42.988390857772 | | |
| 3907 | 347.12624896257 | 157.72423587641 | | | 204.34739235922 | 42.988437796618 | | |
| 3908 | 347.12624896257 | 146.93499916442 | | | 204.34739235922 | 43.076461657 13 | | |
| 3909 | 347.12624896257 | 15.07824227767 9 | | | 204.34739235922 | 43.102617634029 | | |
| 3910 | 347.12624896257 | 249.31666074954 | | | 204.34739235922 | 43.080538375295 | | |
| 3911 | 347.12624896257 | 222.85086987085 | | | 204.34739235922 | 43.058477728917 | | |
| 3912 | 347.12624896257 | 29.16254088287 | | | 204.34739235922 | 43.036441560479 | | |
| 3913 | 347.12624896257 | 15.29219007904 | | | 204.34739235922 | 43.014428135333 | | |
| 3914 | 347.12624896257 | 0.12047501387 13 | | | 204.34739235922 | 42.992437118904 | | |
| 3915 | 347.12624896257 | 15.00731512354 8 | | | 204.34739235922 | 42.970468576687 | | |
| 3916 | 347.12624896257 | 14.85855986717 | | | 204.34739235922 | 42.948522474247 | | |
| 3917 | 347.12624896257 | 0.11060825394 41 | | | 204.34739235922 | 42.926598777221 | | |
| 3918 | 347.12624896257 | 59.38590392807 7 | | | 204.34739235922 | 42.904697461314 | | |
| 3919 | 347.12624896257 | 4.65000000e-005 | | | 204.34739235922 | 42.904697475509 | | |
| 3920 | 348.85187746286 | 15.27655709472 2 | | | 204.34739235922 | 42.882818486066 | | |
| 3921 | 348.85187746286 | 29.29538992217 5 | | | 209.54021495515 | 42.937920887972 | | |
| 3922 | 348.85187746286 | 59.52595138159 8 | | | 209.54021495515 | 42.941859998597 | | |
| 3923 | 348.85187746286 | 198.18005126698 | | | 209.54021495515 | 42.943097755261 | | |
| 3924 | 348.85187746286 | 60.19365167351 6 | | | 209.54021495515 | 43.020733261794 | | |
| 3925 | 348.85187746286 | 15.49274996935 6 | | | 209.54021495515 | 43.121255628138 | | |
| 3926 | 348.85187746286 | 15.83881901590 1 | | | 209.54021495515 | 43.15061623746 | | |
| 3927 | 348.85187746286 | 97.78598587833 | | | 209.54021495515 | 43.151615259752 | | |
| 3928 | 348.85187746286 | 15.10813057980 9 | | | 209.54021495515 | 43.152678473258 | | |
| 3929 | 348.85187746286 | 256.82352524679 | | | 209.54021495515 | 43.156643830931 | | |
| 3930 | 348.85187746286 | 0.31906704913 06 | | | 209.54021495515 | 43.208137380532 | | |
| 3931 | 348.85187746286 | 14.94035473709 | | | 209.54021495515 | 43.212090588609 | | |
| 3932 | 348.85187746286 | 97.87334636041 3 | | | 209.54021495515 | 43.219264110598 | | |
| 3933 | 348.85187746286 | 0.47558859551 43 | | | 209.54021495515 | 43.246773724119 | | |
| 3934 | 348.85187746286 | 107.19559271304 | | | 209.54021495515 | 43.246776265212 | | |
| 3935 | 348.85187746286 | 53.46017090965 1 | | | 209.54021495515 | 43.322222174859 | | |
| 3936 | 348.85187746286 | 109.34932479994 | | | 209.54021495515 | 43.351490453196 | | |
| 3937 | 348.85187746286 | 0.33802634323 47 | | | 209.54021495515 | 43.352414668858 | | |
| 3938 | 348.85187746286 | 146.58065109934 | | | 209.54021495515 | 43.443301444443 | | |
| 3939 | 348.85187746286 | 246.31582465785 | | | 209.54021495515 | 43.475099583944 | | |
| 3940 | 348.85187746286 | 4.65000000e-005 | | | 209.54021495515 | 43.508844565631 | | |
| 3941 | 350 | 4.65000000e-005 | | | 209.54021495515 | 43.512594603706 | | |
| 3942 | | | | | 209.54021495515 | 43.563943847884 | | |

Run 2, Data Delay within the 6th LAN




Run 3, The 1st LAN, Using Simulation Set Up 350, Mean 1 sec, T1 Line 1.544 Mbps




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.0002112 | 0.0002112 | | | 0.0002112 | 0.0002112 | | |
| 1 | 0.0112191333333 | 0.0112191333333 | | | 0.0112191333333 | 0.0114033333333 | | |
| 2 | 1.53412567666667 | 0.0035131249906 | | | 0.0112191333333 | 0.0057151666667 | | |
| 3 | 1.977507351810 2 | 7.04000000e-005 | | | 1.53412567666667 | 0.007471728862 | | |
| 4 | 2.3223256 | 0.0580811496371 | | | 1.53412567666667 | 0.00498115257 46 | | |
| 5 | 2.34680561761833 | 0.00319998566667 | | | 1.977507351810 2 | 0.0050048192413 | | |
| 6 | 3.1511577510258 | 7.04000000e-005 | | | 1.977507351810 2 | 0.00375346443 1 | | |
| 7 | 3.89543564492079 | 0.00319998566667 | | | 2.3223256 | 0.0207737518403 | | |
| 8 | 4.05162619435 42 | 7.04000000e-005 | | | 2.3223256 | 0.0165190014722 | | |
| 9 | 5.69313256938786 | 0.00401013333333 | | | 2.34680561761833 | 0.0172589748056 | | |
| 10 | 6.48533295289 5 | 7.04000000e-005 | | | 2.34680561761833 | 0.0143824790046 | | |
| 11 | 7.62111806666655 | 0.00403298387 52 | | | 3.1511577510258 | 0.0143942123379 | | |
| 12 | 7.78093076472 39 | 7.04000000e-005 | | | 3.1511577510258 | 0.0123378962897 | | |
| 13 | 9.59947103333333 | 0.00404429990035 | | | 3.19652205146 09 | 0.0120479534325 | | |
| 14 | 9.8810744 | 0.259147637681 9 | | | 3.19652205146 09 | 0.0108044692505 | | |
| 15 | 10.1300751461 44 | 0.00401013333333 | | | 3.89543564492079 | 0.0112044425858 | | |
| 16 | 11.189917390946 | 0.0023896 | | | 3.89543564492079 | 0.0099595046216 | | |
| 17 | 12.0928644750 28 | 7.04000000e-005 | | | 4.05162619435 42 | 0.0099873267428 | | |
| 18 | 13.1067273666667 | 0.00352514285 02 | | | 4.05162619435 42 | 0.0089705940694 | | |
| 19 | 13.4741359333334 | 0.41874721229 98 | | | 5.69313256938786 | 0.0083715074028 | | |
| 20 | 13.4951265011 39 | 7.04000000e-005 | | | 5.69313256938786 | 0.0085196430934 | | |
| 21 | 17.3211591802 46 | 0.0105288503719 | | | 6.48533295289 5 | 0.0085260430934 | | |
| 22 | 17.5466489654 | 0.0107494029275 | | | 6.48533295289 5 | 0.0078155395023 | | |
| 23 | 18.3788096633207 | 0.0752247546546 | | | 6.61534668978 46 | 0.0078214061 69 | | |
| 24 | 20.7602405547 04 | 0.0023896 | | | 6.61534668978 46 | 0.0072197595406 | | |
| 25 | 21.5156292383208 | 9.65224785e-005 | | | 7.62111806666655 | 0.0075338352233 | | |
| 26 | 24.0111746752612 | 7.04000000e-005 | | | 7.62111806666655 | 0.0069957041359 | | |
| 27 | 24.9474268078 25 | 0.0023896 | | | 7.78093076472 39 | 0.0070097327070 | | |
| 28 | 26.5727434863208 | 0.870413040411 6 | | | 7.78093076472 39 | 0.0065340171935 | | |
| 29 | 26.7346917424 | 7.04000000e-005 | | | 8.484771481672 | 0.0065387105259 | | |
| 30 | 27.2496807284 48 | 0.00319998566667 | | | 8.484771481672 | 0.0061300411189 | | |
| 31 | 28.4998905150 05 | 0.0023896 | | | 8.87732485566 76 | 0.0061344411189 | | |
| 32 | 28.6034678058 | 7.04000000e-005 | | | 8.87732485566 76 | 0.0057735915413 | | |
| 33 | 31.2771547841 73 | 0.0179693389173 | | | 9.59947103333333 | 0.0060114974651 | | |
| 34 | 31.9478733795 56 | 7.04000000e-005 | | | 9.59947103333333 | 0.0058775253837 | | |

Run 3, Data Delay within the 1st LAN

Extend

File Edit Library Model Text Define Run Window Help

[45] Surabaya Main Naval Base LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 35 | 38.4686488820699 | 0.0031998666667 | | | 9.8810744 | 0.020074616366 | | |
| 36 | 38.461943100546 | 7.04000000e-005 | | | 9.8810744 | 0.0190180576099 | | |
| 37 | 38.05303355084 | 0.0095344698767 | | | 10.13007514644 | 0.019229117259 | | |
| 38 | 38.529627632448 | 0.0023896 | | | 10.13007514644 | 0.018267613951 | | |
| 39 | 39.283521931208 | 7.04000000e-005 | | | 11.189917399946 | 0.018387141396 1 | | |
| 40 | 40.24860295094 | 0.0134087792628 | | | 11.189917399946 | 0.017511563234 4 | | |
| 41 | 40.676795274036 | 7.04000000e-005 | | | 12.093884976098 | 0.017514915515 3 | | |
| 42 | 41.331839862419 | 0.0023896 | | | 12.093884976098 | 0.016718783873 | | |
| 43 | 43.250907005977 | 7.04000000e-005 | | | 12.163823463355 | 0.016721933873 | | |
| 44 | 46.695112050641 | 0.553781983161 | | | 12.163823463355 | 0.015994403444 | | |
| 45 | 46.423089884174 | 0.0074112028555 | | | 12.467443457416 | 0.015998001214 | | |
| 46 | 46.464523592719 | 7.04000000e-005 | | | 12.467443457416 | 0.015331417301 | | |
| 47 | 52.160958280771 | 0.0031998666667 | | | 13.106727366667 | 0.014782987822 | | |
| 48 | 55.296393849582 | 7.04000000e-005 | | | 13.106727366667 | 0.014859166309 | | |
| 49 | 55.814485283928 | 0.0023896 | | | 13.474135933334 | 0.0318090553289 | | |
| 50 | 55.383785112119 | 7.04000000e-005 | | | 13.474135933334 | 0.0000932014297 | | |
| 51 | 58.755985295174 | 0.0023896 | | | 13.495126501139 | 0.0303998020122 | | |
| 52 | 59.057504821103 | 0.0040101333333 | | | 13.495126501139 | 0.0292702512286 | | |
| 53 | 59.403833370483 | 7.04000000e-005 | | | 15.098998549061 | 0.0292728586636 | | |
| 54 | 64.240806817509 | 0.0056512053314 | | | 15.098998549061 | 0.0292273999996 | | |
| 55 | 64.355582783561 | 7.04000000e-005 | | | 17.021159180246 | 0.0286070901198 | | |
| 56 | 68.254142450844 | 0.0067533681002 | | | 17.021159180246 | 0.0276205528808 | | |
| 57 | 69.995034705248 | 0.0031998666667 | | | 17.546649969654 | 0.0279912219473 | | |
| 58 | 70.863220577861 | 7.04000000e-005 | | | 17.546649969654 | 0.0270581812157 | | |
| 59 | 71.808740030421 | 0.0031998666667 | | | 18.078809863207 | 0.0295650063675 | | |
| 60 | 72.122403055462 | 0.0023896 | | | 18.078809863207 | 0.0288122642266 | | |
| 61 | 72.143944517512 | 0.0079392462054 | | | 20.760240554704 | 0.0288393480976 | | |
| 62 | 72.998381484179 | 0.0078681222354 | | | 20.760240554704 | 0.0277928059696 | | |
| 63 | 74.101567751803 | 7.04000000e-005 | | | 21.515629363208 | 0.0277995825422 | | |
| 64 | 74.356876060661 | 0.0023896 | | | 21.515629363208 | 0.0269532776819 | | |
| 65 | 74.520429250846 | 0.0068973738548 | | | 24.011746753612 | 0.0289556610153 | | |
| 66 | 74.625886311202 | 7.04000000e-005 | | | 24.011746753612 | 0.0261623847466 | | |
| 67 | 75.801544721851 | 0.0023896 | | | 24.347408037825 | 0.0262331298088 | | |
| 68 | 75.952297918009 | 7.04000000e-005 | | | 24.347408037825 | 0.0254535118144 | | |
| 69 | 76.467924352297 | 0.0023896 | | | 26.572743463208 | 0.0503525558262 | | |
| 70 | 78.130445384181 | 1.1035199887258 | | | 26.572743463208 | 0.0489538737199 | | |

Extend

File Edit Library Model Text Define Run Window Help

[439] Surabaya Main Naval Base LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 70 | 78.130445384181 | 1.1035199887258 | | | 26.572743463208 | 0.0489538737199 | | |
| 71 | 78.507518015606 | 0.0023896 | | | 26.734691742 4 | 0.0489558292754 | | |
| 72 | 78.843192577651 | 7.04000000e-005 | | | 26.734691742 4 | 0.0476326987545 | | |
| 73 | 78.847642317514 | 2.1508992079077 | | | 27.077714719793 | 0.0476346014672 | | |
| 74 | 79.500177047304 | 7.04000000e-005 | | | 27.077714719793 | 0.0462810593136 | | |
| 75 | 80.137318717515 | 1.1446523851458 | | | 27.249680728449 | 0.0464652563311 | | |
| 76 | 80.589032457754 | 7.04000000e-005 | | | 27.249680728449 | 0.0452738492467 | | |
| 77 | 82.351514152005 | 0.0023896 | | | 28.499890516005 | 0.0453351210406 | | |
| 78 | 83.098884230423 | 7.04000000e-005 | | | 28.499890516005 | 0.0442017430146 | | |
| 79 | 86.60721929341 | 0.0023896 | | | 28.60346708058 | 0.0442035030146 | | |
| 80 | 87.020612520603 | 0.0031998666667 | | | 28.60346708058 | 0.0431253687947 | | |
| 81 | 87.021859264696 | 7.04000000e-005 | | | 29.292023238028 | 0.0431270869679 | | |
| 82 | 88.595139784185 | 3.7718806157588 | | | 29.292023238028 | 0.0421002504901 | | |
| 83 | 88.781478263675 | 0.0040101333333 | | | 29.759702879233 | 0.0421019266805 | | |
| 84 | 89.237964732327 | 7.04000000e-005 | | | 29.759702879233 | 0.0411228121066 | | |
| 85 | 92.534666912719 | 0.0023896 | | | 31.277154784173 | 0.0415407037093 | | |
| 86 | 93.593916050635 | 7.04000000e-005 | | | 31.277154784173 | 0.0405965858068 | | |
| 87 | 94.782227884136 | 0.0044041927326 | | | 31.947873379566 | 0.0405981968068 | | |
| 88 | 95.273656617752 | 0.0084556097035 | | | 31.947873379566 | 0.0398960146555 | | |
| 89 | 95.556810357247 | 7.04000000e-005 | | | 33.025002402588 | 0.0396975791 | | |
| 90 | 96.082713998844 | 0.0031998666667 | | | 33.025002402588 | 0.0388345825 | | |
| 91 | 96.685023989265 | 7.04000000e-005 | | | 34.373215827708 | 0.0388261186848 | | |
| 92 | 98.832046317522 | 1.3097697518847 | | | 34.373215827708 | 0.0380098182872 | | |
| 93 | 99.259150259213 | 0.0031998666667 | | | 34.769796055066 | 0.0380113161596 | | |
| 94 | 100.02431899376 | 0.0023896 | | | 34.769796055066 | 0.0372194137398 | | |
| 95 | 101.00499020043 | 7.04000000e-005 | | | 35.468648820699 | 0.0372680776285 | | |
| 96 | 101.03473647501 | 0.0031998666667 | | | 35.468648820699 | 0.0365251372687 | | |
| 97 | 104.43909416108 | 0.0023896 | | | 36.461943100546 | 0.0365265740034 | | |
| 98 | 105.26438051731 | 0.0031998666667 | | | 36.461943100546 | 0.0357960425233 | | |
| 99 | 105.653772435567 | 7.04000000e-005 | | | 37.289215952017 | 0.0357974505233 | | |
| 100 | 110.09256887071 | 0.0023896 | | | 37.289215952017 | 0.0350955397287 | | |
| 101 | 110.402198784419 | 1.3990366061438 | | | 38.053303355084 | 0.0352824001146 | | |
| 102 | 111.577832493 8 | 7.04000000e-005 | | | 38.053303355084 | 0.0346039806893 | | |
| 103 | 112.670826481817 | 0.0040101333333 | | | 38.529627632448 | 0.0346489346354 | | |
| 104 | 112.963779105 6 | 7.04000000e-005 | | | 38.529627632448 | 0.0339951621857 | | |
| 105 | 113.481673408 6 | 1.4273409917788 | | | 39.283521931208 | 0.0339951621857 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 105 | 110.1681572508 | 1.427464281756 | | | 39.28052193120 | 0.0033974804876 | | |
| 106 | 110.9551668175 | 1.425545058003 | | | 39.28052193120 | 0.0033679070304 | | |
| 107 | 115.3547480537 | 7.04000000e-005 | | | 40.03427258161 | 0.0033692110041 | | |
| 108 | 116.0596321175 | 2.927928056995 | | | 40.03427258161 | 0.0032762448105 | | |
| 109 | 116.8144295086 | 0.0080106265213 | | | 40.0354044112 | 0.0032763778105 | | |
| 110 | 117.7589007501 | 7.04000000e-005 | | | 40.0354044112 | 0.0032787105401 | | |
| 111 | 118.0616151234 | 0.0031998865657 | | | 40.24850295084 | 0.0032418117412 | | |
| 112 | 118.7730446799 | 7.04000000e-005 | | | 40.24850295084 | 0.0031849078510 | | |
| 113 | 119.8963654008 | 1.540103403974 | | | 40.67679527403 | 0.0031850613993 | | |
| 114 | 119.4074683524 | 7.04000000e-005 | | | 40.67679527403 | 0.0031301465093 | | |
| 115 | 119.8411794592 | 0.0040101333333 | | | 40.70000471577 | 0.0031302678981 | | |
| 116 | 121.08311495 | 7.04000000e-005 | | | 40.70000471577 | 0.0030772125001 | | |
| 117 | 123.1933227217 | 0.0040101333333 | | | 41.09419851991 | 0.0030773018222 | | |
| 118 | 124.0850440603 | 7.04000000e-005 | | | 41.09419851991 | 0.0030604295851 | | |
| 119 | 125.5149768775 | 0.0023896 | | | 41.89183982419 | 0.0030302582513 | | |
| 120 | 125.6576934842 | 1.306283109191 | | | 41.89183982419 | 0.0298035307394 | | |
| 121 | 126.0525685052 | 7.04000000e-005 | | | 42.25093700597 | 0.0298046848078 | | |
| 122 | 126.4184783213 | 0.0023896 | | | 42.25093700597 | 0.0298238841146 | | |
| 123 | 126.2018839812 | 7.04000000e-005 | | | 42.62858660703 | 0.0298250995985 | | |
| 124 | 128.7207299175 | 0.0050121880505 | | | 42.62858660703 | 0.0288696218271 | | |
| 125 | 131.0934765087 | 0.0094835492403 | | | 44.29603277064 | 0.0288607392874 | | |
| 126 | 131.5972731181 | 7.04000000e-005 | | | 44.29603277064 | 0.0284087902036 | | |
| 127 | 132.7837291175 | 0.0050105852401 | | | 45.20647464397 | 0.0284108890208 | | |
| 128 | 133.0413661842 | 0.0047219204112 | | | 45.20647464397 | 0.0279737998517 | | |
| 129 | 133.4492985753 | 7.04000000e-005 | | | 45.59511205841 | 0.0364935224073 | | |
| 130 | 135.7287367278 | 0.0031998865656 | | | 45.59511205841 | 0.0359405902791 | | |
| 131 | 135.7973857169 | 0.0023896 | | | 46.42808984174 | 0.0355528812315 | | |
| 132 | 135.9729992842 | 0.0134295130872 | | | 46.42808984174 | 0.0355147785267 | | |
| 133 | 136.58288145 | 7.04000000e-005 | | | 46.46452392719 | 0.0355158292729 | | |
| 134 | 138.1472895842 | 0.0035643079337 | | | 46.46452392719 | 0.0349935537658 | | |
| 135 | 141.1105963821 | 0.0040101333333 | | | 47.58821856094 | 0.0349946729601 | | |
| 136 | 141.1895825618 | 0.0023896 | | | 47.58821856094 | 0.0344874052036 | | |
| 137 | 143.3431427701 | 7.04000000e-005 | | | 47.76379681580 | 0.0344884255259 | | |
| 138 | 143.3750034076 | 0.0031998865656 | | | 47.76379681580 | 0.0339957337327 | | |
| 139 | 143.4752258725 | 0.0045199827131 | | | 50.30570716340 | 0.0339967394447 | | |
| 140 | 143.7220292347 | 7.04000000e-005 | | | 50.30570716340 | 0.0335179121308 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 140 | 143.7220292347 | 7.04000000e-005 | | | 50.30570716340 | 0.0335179121308 | | |
| 141 | 144.8332034749 | 0.0031998865656 | | | 51.75792830736 | 0.0335189066801 | | |
| 142 | 146.6907059235 | 7.04000000e-005 | | | 51.75792830736 | 0.0330503603512 | | |
| 143 | 148.9515678635 | 0.0023896 | | | 52.12023687281 | 0.0330543041129 | | |
| 144 | 149.0326536851 | 0.0031998865656 | | | 52.12023687281 | 0.0326015419054 | | |
| 145 | 149.3209583175 | 0.0111026051484 | | | 52.16096828077 | 0.0326463757254 | | |
| 146 | 149.9755906028 | 7.04000000e-005 | | | 52.16096828077 | 0.0322042219994 | | |
| 147 | 150.5685201503 | 0.0079156053386 | | | 52.89428772203 | 0.0322474634408 | | |
| 148 | 151.2034589543 | 7.04000000e-005 | | | 52.89428772203 | 0.0318174972616 | | |
| 149 | 151.3007256058 | 0.0023896 | | | 55.29609849582 | 0.0318194259283 | | |
| 150 | 151.4718981025 | 7.04000000e-005 | | | 55.29609849582 | 0.0313997722976 | | |
| 151 | 151.5547702817 | 0.0031998865656 | | | 55.81448528399 | 0.0314012144029 | | |
| 152 | 152.3919358279 | 7.04000000e-005 | | | 55.81448528399 | 0.0310030168133 | | |
| 153 | 160.0401354799 | 0.0023896 | | | 56.89378611211 | 0.0310209210994 | | |
| 154 | 161.9341858014 | 7.04000000e-005 | | | 56.89378611211 | 0.0306261803926 | | |
| 155 | 164.2409422508 | 0.0081607350631 | | | 57.41300030148 | 0.0306270909567 | | |
| 156 | 164.9462271812 | 7.04000000e-005 | | | 57.41300030148 | 0.0302394065261 | | |
| 157 | 167.2425758608 | 1.768590392833 | | | 57.87224643561 | 0.0302402974023 | | |
| 158 | 167.3988831755 | 1.777213126965 | | | 57.87224643561 | 0.0299622935828 | | |
| 159 | 167.7366721175 | 0.0054415576604 | | | 58.57947066101 | 0.0298831738828 | | |
| 160 | 168.3229041107 | 7.04000000e-005 | | | 58.57947066101 | 0.0294044925282 | | |
| 161 | 169.5749587914 | 0.0031998865656 | | | 58.75598529517 | 0.0295235937607 | | |
| 162 | 170.4640050546 | 7.04000000e-005 | | | 58.75598529517 | 0.0291639450583 | | |
| 163 | 171.4092765074 | 0.0023896 | | | 59.0876048210 | 0.0292128491214 | | |
| 164 | 171.8574037751 | 7.04000000e-005 | | | 59.0876048210 | 0.0288606870808 | | |
| 165 | 173.7989205088 | 1.707401152857 | | | 59.40350370483 | 0.0288617352766 | | |
| 166 | 173.9872853842 | 1.700485207962 | | | 59.40350370483 | 0.0285181401899 | | |
| 167 | 175.2702022523 | 7.04000000e-005 | | | 59.77514131353 | 0.0285189812852 | | |
| 168 | 175.2834765505 | 0.0119798724151 | | | 59.77514131353 | 0.0281834638583 | | |
| 169 | 176.5625267314 | 0.0023896 | | | 61.56547052833 | 0.0281842923936 | | |
| 170 | 179.3157618195 | 0.0031998865656 | | | 61.56547052833 | 0.0278555577689 | | |
| 171 | 179.5985143175 | 1.744793855215 | | | 63.79732425891 | 0.0278575863716 | | |
| 172 | 179.8801450539 | 7.04000000e-005 | | | 63.79732425891 | 0.0275371885282 | | |
| 173 | 180.5159402071 | 0.0031998865656 | | | 64.24089617509 | 0.0276021429113 | | |
| 174 | 180.8840152429 | 7.04000000e-005 | | | 64.24089617509 | 0.0272984821964 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 175 | 182.48968495089 | 0.0039414798056 | | | 64.255582783561 | 0.0272692921964 | | |
| 176 | 184.19125913415 | 0.0040101333333 | | | 64.255582783561 | 0.0269326810481 | | |
| 177 | 184.3758168417 | 0.0023896 | | | 65.287226904797 | 0.0269834520594 | | |
| 178 | 184.54056450419 | 7.04000000e-005 | | | 65.287226904797 | 0.0268835359254 | | |
| 179 | 186.4599509456 | 0.0023896 | | | 67.980406328673 | 0.0268844181476 | | |
| 180 | 190.46064104528 | 7.04000000e-005 | | | 67.980406328673 | 0.0263911827834 | | |
| 181 | 191.9640931174 9 | 0.0023896 | | | 68.254142460844 | 0.0264650990581 | | |
| 182 | 192.0603860375 | 7.04000000e-005 | | | 68.254142460844 | 0.0261777316177 | | |
| 183 | 193.02492035444 | 0.0040101333333 | | | 69.995004705248 | 0.0262125120365 | | |
| 184 | 193.63152493124 | 7.04000000e-005 | | | 69.995034705248 | 0.0259306578597 | | |
| 185 | 197.22302569598 | 0.0040101333333 | | | 70.409640146435 | 0.0259650650282 | | |
| 186 | 200.08201524955 | 7.04000000e-005 | | | 70.409640146435 | 0.0256828409321 | | |
| 187 | 200.7508244726 9 | 0.0023896 | | | 70.804395999805 | 0.0257228820648 | | |
| 188 | 202.20369058907 | 7.04000000e-005 | | | 70.804395999805 | 0.0254521146872 | | |
| 189 | 202.89383460407 | 0.0040101333333 | | | 70.862220677861 | 0.0254628558399 | | |
| 190 | 203.00144624829 | 17.7024817547 59 | | | 70.862220677861 | 0.0251877220238 | | |
| 191 | 203.5301001783 | 7.04000000e-005 | | | 70.941747437943 | 0.0251884453572 | | |
| 192 | 204.75176861736 | 0.0040101333333 | | | 70.941747437943 | 0.0249287805597 | | |
| 193 | 205.61614215293 | 7.04000000e-005 | | | 71.808740030421 | 0.0249617888758 | | |
| 194 | 206.46246514118 | 0.0023896 | | | 71.808740030421 | 0.0247070569465 | | |
| 195 | 206.51866471969 | 0.0031998666666 | | | 72.122433055462 | 0.0247314406622 | | |
| 196 | 207.27918086873 | 7.04000000e-005 | | | 72.122433055462 | 0.0244816280904 | | |
| 197 | 209.35261907655 | 0.0023896 | | | 72.143944617512 | 0.0246618224966 | | |
| 198 | 209.60412146605 | 0.0040101333333 | | | 72.143944617512 | 0.0243152042716 | | |
| 199 | 210.05519503312 | 0.0023896 | | | 72.998381484179 | 0.0243948854939 | | |
| 200 | 210.90889503264 | 7.04000000e-005 | | | 72.998381484179 | 0.0241603519742 | | |
| 201 | 211.51855586801 | 0.0031998666666 | | | 74.101587751803 | 0.0241540490039 | | |
| 202 | 213.73159304919 | 7.04000000e-005 | | | 74.101587751803 | 0.0239172446019 | | |
| 203 | 214.79773401121 | 0.005367556379 | | | 74.256976060661 | 0.0239406720529 | | |
| 204 | 217.41052176406 | 0.0023896 | | | 74.256976060661 | 0.0237082383436 | | |
| 205 | 217.43168990009 | 7.04000000e-005 | | | 74.520429250846 | 0.0237752031383 | | |
| 206 | 217.56619118928 | 0.0031998666666 | | | 74.520429250846 | 0.0235465954159 | | |
| 207 | 221.04856216278 | 7.04000000e-005 | | | 74.525886311202 | 0.0235472733389 | | |
| 208 | 222.07913243213 | 0.0023896 | | | 74.525886311202 | 0.0233290128024 | | |
| 209 | 223.48883201173 | 7.04000000e-005 | | | 75.801544731851 | 0.0233467706976 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 210 | 224.73828105351 | 0.0043074212036 | | | 75.801544731851 | 0.0231255275778 | | |
| 211 | 224.97868522413 | 0.0031998666666 | | | 75.952297918009 | 0.0231261917288 | | |
| 212 | 225.38374063589 | 0.0040101333333 | | | 75.952297918009 | 0.0229100590958 | | |
| 213 | 225.72778025795 | 0.0031998666666 | | | 76.198969359088 | 0.0229107170397 | | |
| 214 | 227.49918167717 | 7.04000000e-005 | | | 76.198969359088 | 0.0226985807798 | | |
| 215 | 227.56339959035 | 0.0031998666666 | | | 76.467924052897 | 0.0227207066958 | | |
| 216 | 228.24248944874 | 0.0023896 | | | 76.467924052897 | 0.0225122598453 | | |
| 217 | 229.56361031556 | 7.04000000e-005 | | | 78.130546384181 | 0.0226372138713 | | |
| 218 | 231.28305203386 | 0.0033545242131 | | | 78.130546384181 | 0.0232340511927 | | |
| 219 | 231.52858756717 | 0.0031998666666 | | | 78.507518015606 | 0.0232622355634 | | |
| 220 | 232.97877395319 | 7.04000000e-005 | | | 78.507518015606 | 0.0230706338917 | | |
| 221 | 233.46455597787 | 0.0031998666666 | | | 78.843192577651 | 0.0230713151259 | | |
| 222 | 233.94444684013 | 7.04000000e-005 | | | 78.843192577651 | 0.0317849670712 | | |
| 223 | 234.44207980526 | 0.0023896 | | | 78.847642317514 | 0.0509894242847 | | |
| 224 | 235.37110425179 | 7.04000000e-005 | | | 78.847642317514 | 0.0505381904414 | | |
| 225 | 236.31234461999 | 0.0031998666666 | | | 79.500177047304 | 0.0505388134603 | | |
| 226 | 236.78108095794 | 0.0030999376527 | | | 79.500177047304 | 0.0500954205253 | | |
| 227 | 237.52272233481 | 7.04000000e-005 | | | 80.137318717515 | 0.0501363050118 | | |
| 228 | 243.11901187951 | 0.0023896 | | | 80.137318717515 | 0.0596133805204 | | |
| 229 | 243.24698005238 | 7.04000000e-005 | | | 80.589032457764 | 0.0596139927943 | | |
| 230 | 244.07749972981 | 0.0031998666666 | | | 80.589032457764 | 0.0591000790633 | | |
| 231 | 244.47692125447 | 7.04000000e-005 | | | 80.918403025748 | 0.0591006859588 | | |
| 232 | 246.52002988118 | 0.0040101333333 | | | 80.918403025748 | 0.0585955518918 | | |
| 233 | 247.30714061699 | 0.0023896 | | | 82.351514162035 | 0.0586159758234 | | |
| 234 | 248.46778682554 | 7.04000000e-005 | | | 82.351514162035 | 0.0581192302656 | | |
| 235 | 251.60360143093 | 0.0091812579379 | | | 83.098884230423 | 0.0581198268758 | | |
| 236 | 253.75795281843 | 0.0023896 | | | 83.098884230423 | 0.0576314249693 | | |
| 237 | 253.84096592329 | 0.0040101333333 | | | 84.933951524425 | 0.0576320165659 | | |
| 238 | 253.90135802607 | 0.0031998666666 | | | 84.933951524425 | 0.0571517497612 | | |
| 239 | 253.98717354871 | 7.04000000e-005 | | | 85.143014071927 | 0.0571523364278 | | |
| 240 | 254.37751588385 | 0.0164189037951 | | | 85.143014071927 | 0.0566800330689 | | |
| 241 | 254.57574168385 | 0.0062947788985 | | | 86.607219293041 | 0.0566997518293 | | |
| 242 | 254.62732076194 | 7.04000000e-005 | | | 86.607219293041 | 0.0562349997651 | | |
| 243 | 255.85673023265 | 0.0031998666666 | | | 87.020612529603 | 0.0562612281804 | | |
| 244 | 256.0200303194 | 7.04000000e-005 | | | 87.020612529603 | 0.0558038198212 | | |

Extend

File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

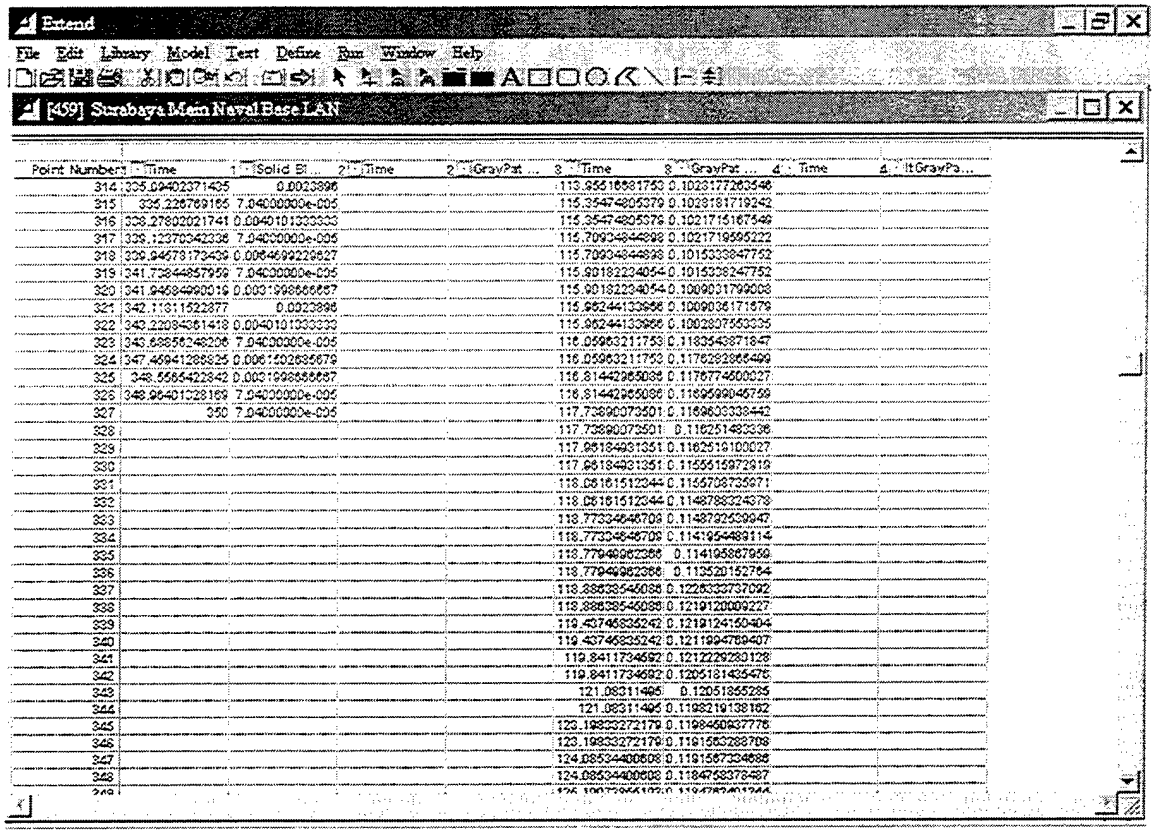
| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : GravPa... |
|---|---|---|---|---|---|---|---|---|
| 245 | 256.02147393248 | 0.00401013333333 | | | 87.0218592654696 | 0.0558043921789 | | |
| 246 | 257.25703110076 | 7.04000000e-005 | | | 87.0218592654696 | 0.0560543567531 | | |
| 247 | 257.89946272046 | 0.00319998666667 | | | 88.0033562790029 | 0.0550546245001 | | |
| 248 | 258.78283518931 | 7.04000000e-005 | | | 88.0033562790029 | 0.0549120851041 | | |
| 249 | 260.02773667882 | 0.00319998666667 | | | 88.0291038691089 | 0.0549126483041 | | |
| 250 | 261.17655568146 | 7.04000000e-005 | | | 88.0291038691089 | 0.0544768003635 | | |
| 251 | 261.54936593154 | 0.00617244418793 | | | 88.5981387841185 | 0.0544123940775 | | |
| 252 | 263.09417749417 | 7.04000000e-005 | | | 88.5981387841185 | 0.0537477295572 | | |
| 253 | 263.1323309257 | 0.0023896 | | | 88.7814782636875 | 0.0537793054102 | | |
| 254 | 263.47728083962 | 7.04000000e-005 | | | 88.7814782636875 | 0.0531247795857 | | |
| 255 | 265.53520008929 | 0.00319998666667 | | | 89.2079647032327 | 0.0531253297667 | | |
| 256 | 267.14264449205 | 7.04000000e-005 | | | 89.2079647032327 | 0.0524809471868 | | |
| 257 | 271.21583851128 | 0.00319998666667 | | | 91.5548982461830 | 0.0524814429233 | | |
| 258 | 275.14057509573 | 7.04000000e-005 | | | 91.5548982461830 | 0.0518470199008 | | |
| 259 | 275.14656517201 | 0.00319998666667 | | | 92.9346669127719 | 0.0518554014382 | | |
| 260 | 276.15188005593 | 7.04000000e-005 | | | 92.9346669127719 | 0.0512404747107 | | |
| 261 | 279.77582343362 | 0.00406043766614 | | | 93.5939165056835 | 0.0512410121153 | | |
| 262 | 280.69161981124 | 0.0023896 | | | 93.5939165056835 | 0.0505255489023 | | |
| 263 | 281.73055229614 | 0.00319998666667 | | | 94.7822278864186 | 0.0505589149987 | | |
| 264 | 281.95326800295 | 7.04000000e-005 | | | 94.7822278864186 | 0.0500524669912 | | |
| 265 | 283.21586027371 | 0.00319998666667 | | | 95.2736666617752 | 0.0501116033004 | | |
| 266 | 283.50847311225 | 0.00542263302318 | | | 95.2736666617752 | 0.0495181521607 | | |
| 267 | 283.72503244296 | 0.00319998666667 | | | 95.5668103572420 | 0.0495186775339 | | |
| 268 | 284.4693461073 | 7.04000000e-005 | | | 95.5668103572420 | 0.0489296502529 | | |
| 269 | 285.35419887356 | 0.00401013333333 | | | 95.9827139986440 | 0.0489533530089 | | |
| 270 | 285.59947023493 | 7.04000000e-005 | | | 95.9827139986440 | 0.0483726125485 | | |
| 271 | 287.97388885 | 0.00401013333333 | | | 96.2132975152920 | 0.0483963420799 | | |
| 272 | 289.25829848135 | 7.04000000e-005 | | | 96.2132975152920 | 0.0478241060583 | | |
| 273 | 289.83401575492 | 0.00615649892804 | | | 96.6880239892555 | 0.0478246199875 | | |
| 274 | 291.02353995449 | 0.0023896 | | | 96.6880239892555 | 0.0472606703541 | | |
| 275 | 292.07799994892 | 7.04000000e-005 | | | 97.6666972618886 | 0.0472611834491 | | |
| 276 | 292.44469319651 | 0.00401013333333 | | | 97.6666972618886 | 0.0467053476465 | | |
| 277 | 294.53339779297 | 7.04000000e-005 | | | 98.8320463175220 | 0.0467281516889 | | |
| 278 | 294.7020422466 | 0.00401013333333 | | | 98.8320463175220 | 0.0461129506054 | | |
| 279 | 294.9389638868 | 0.0023896 | | | 99.2591502592213 | 0.0461535867959 | | |
| 280 | 295.10752124167 | 7.04000000e-005 | | | 99.2591502592213 | 0.0455291699682 | | |
| 281 | 297.33717395118 | 0.0023896 | | | 100.024316903 76 | 0.0455946117386 | | |
| 282 | 297.72085916696 | 0.00319998666667 | | | 100.024316903 76 | 0.0449479052917 | | |
| 283 | 298.20879892534 | 0.0023896 | | | 101.004990200 43 | 0.0449484010663 | | |
| 284 | 299.59070961467 | 7.04000000e-005 | | | 101.004990200 43 | 0.0443585521078 | | |
| 285 | 302.05959300188 | 0.00319998666667 | | | 101.034735475 01 | 0.0443589297978 | | |
| 286 | 302.72019977101 | 7.04000000e-005 | | | 101.034735475 01 | 0.0437991157922 | | |
| 287 | 303.13246728025 | 0.00401013333333 | | | 104.439094151 06 | 0.0437157112367 | | |
| 288 | 303.4124376715 9 | 0.0023896 | | | 104.439094151 06 | 0.0431418097799 | | |
| 289 | 303.60992857 34 | 0.00319998666667 | | | 105.254380517 31 | 0.0431423779259 | | |
| 290 | 303.94899375482 | 0.0023896 | | | 105.254380517 31 | 0.0425976868819 | | |
| 291 | 304.11358997053 | 0.00319998666667 | | | 105.653772405 67 | 0.0425981590737 | | |
| 292 | 304.52759746895 | 7.04000000e-005 | | | 105.653772405 67 | 0.0419396781276 | | |
| 293 | 305.32085528059 | 0.00319998666667 | | | 107.306012277 56 | 0.0419401570091 | | |
| 294 | 305.33275954046 | 7.04000000e-005 | | | 107.306012277 56 | 0.0413089210321 | | |
| 295 | 311.73487582757 | 0.0023896 | | | 108.731821100 38 | 0.0413089857978 | | |
| 296 | 312.22105147453 | 7.04000000e-005 | | | 108.731821100 38 | 0.0407461307702 | | |
| 297 | 313.50067552314 | 0.0023896 | | | 109.062502575 1 | 0.0407466032534 | | |
| 298 | 315.01609504794 | 7.04000000e-005 | | | 109.062502575 1 | 0.0401910292565 | | |
| 299 | 317.19336036192 | 0.0023896 | | | 110.092568870 71 | 0.0401922232317 | | |
| 300 | 317.50314375 07 | 0.00319998666667 | | | 110.092568870 71 | 0.0396959104951 | | |
| 301 | 318.05043756818 | 7.04000000e-005 | | | 110.402198784 19 | 0.0396820535821 | | |
| 302 | 318.48123800067 | 0.00319998666667 | | | 110.402198784 19 | 0.0390787505698 | | |
| 303 | 319.13826209375 | 7.04000000e-005 | | | 111.577832249 38 | 0.0390792137559 | | |
| 304 | 320.55396007824 | 0.00441154324249 | | | 111.577832249 38 | 0.0385035356202 | | |
| 305 | 320.89322866825 | 0.0023896 | | | 112.387335517 43 | 0.0385039992751 | | |
| 306 | 321.71785102504 | 7.04000000e-005 | | | 112.387335517 43 | 0.0379257850058 | | |
| 307 | 328.74700006072 | 0.00401013333333 | | | 112.670326418 17 | 0.0379618248327 | | |
| 308 | 329.54019738596 | 7.04000000e-005 | | | 112.670326418 17 | 0.0374007808015 | | |
| 309 | 329.59410024625 | 0.00319998666667 | | | 112.935377010 56 | 0.0374012349095 | | |
| 310 | 330.25154826543 | 7.04000000e-005 | | | 112.935377010 56 | 0.0368473809246 | | |
| 311 | 331.82409794861 | 0.0023896 | | | 112.158157250 86 | 0.0368977929872 | | |
| 312 | 332.65527100726 | 0.00319998666667 | | | 113.158157250 86 | 0.0363927115032 | | |
| 313 | 334.9639900883 | 7.04000000e-005 | | | 113.956166817 53 | 0.0363726160315 | | |

Extend

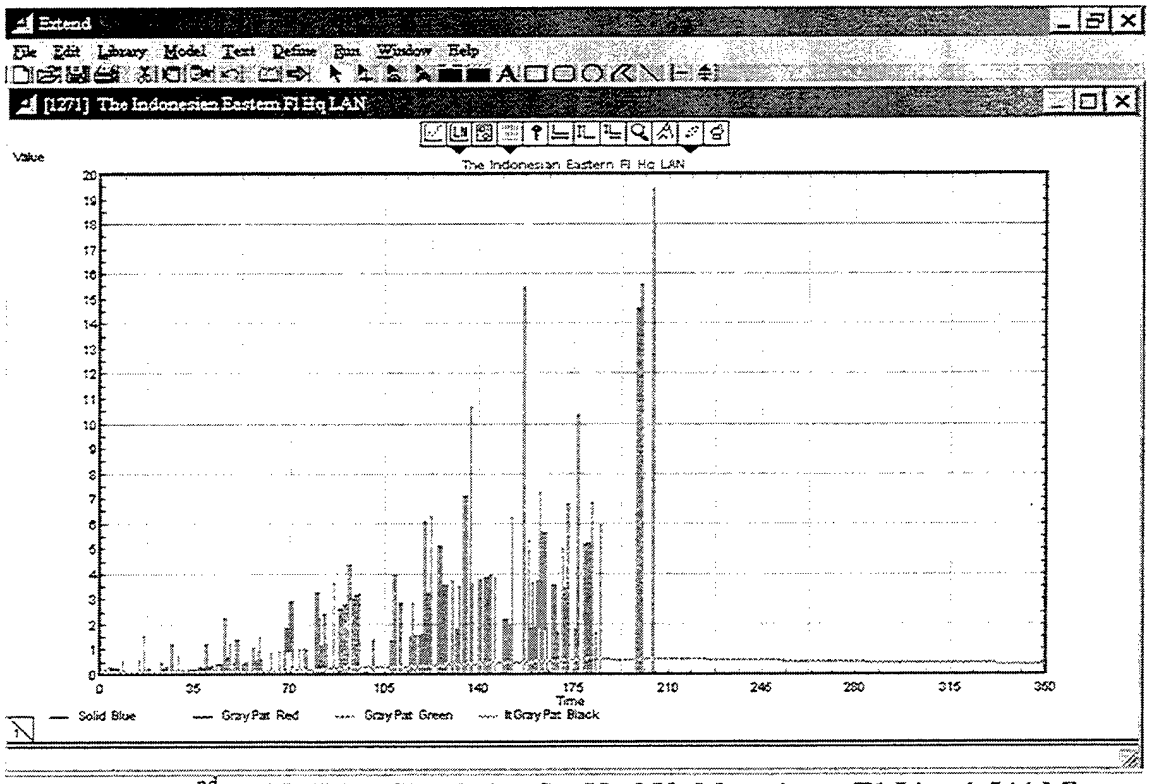
File Edit Library Model Text Define Run Window Help

[459] Surabaya Main Naval Base LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : GravPa... |
|---|---|---|---|---|---|---|---|---|
| 279 | 294.9389638868 | 0.0023896 | | | 99.2591502592213 | 0.0455358067959 | | |
| 280 | 295.10752124167 | 7.04000000e-005 | | | 99.2591502592213 | 0.0449291699682 | | |
| 281 | 297.33717395118 | 0.0023896 | | | 100.024316903 76 | 0.0449461173386 | | |
| 282 | 297.72085916696 | 0.00319998666667 | | | 100.024316903 76 | 0.0443479052917 | | |
| 283 | 298.20879892534 | 0.0023896 | | | 101.004990200 43 | 0.0443484010663 | | |
| 284 | 299.59070961467 | 7.04000000e-005 | | | 101.004990200 43 | 0.0437585521078 | | |
| 285 | 302.05959300188 | 0.00319998666667 | | | 101.034735475 01 | 0.0437589297978 | | |
| 286 | 302.72019977101 | 7.04000000e-005 | | | 101.034735475 01 | 0.0431991157922 | | |
| 287 | 303.13246728025 | 0.00401013333333 | | | 104.439094151 06 | 0.0432157112367 | | |
| 288 | 303.4124376715 9 | 0.0023896 | | | 104.439094151 06 | 0.0425418097799 | | |
| 289 | 303.60992857 34 | 0.00319998666667 | | | 105.254380517 31 | 0.0425423779259 | | |
| 290 | 303.94899375482 | 0.0023896 | | | 105.254380517 31 | 0.0419976868819 | | |
| 291 | 304.11358997053 | 0.00319998666667 | | | 105.653772405 67 | 0.0419981590737 | | |
| 292 | 304.52759746895 | 7.04000000e-005 | | | 105.653772405 67 | 0.0413396781276 | | |
| 293 | 305.32085528059 | 0.00319998666667 | | | 107.306012277 56 | 0.0413401570091 | | |
| 294 | 305.33275954046 | 7.04000000e-005 | | | 107.306012277 56 | 0.0407089210321 | | |
| 295 | 311.73487582757 | 0.0023896 | | | 108.731821100 38 | 0.0407089857978 | | |
| 296 | 312.22105147453 | 7.04000000e-005 | | | 108.731821100 38 | 0.0401461307702 | | |
| 297 | 313.50067552314 | 0.0023896 | | | 109.062502575 1 | 0.0401466032534 | | |
| 298 | 315.01609504794 | 7.04000000e-005 | | | 109.062502575 1 | 0.0395910292565 | | |
| 299 | 317.19336036192 | 0.0023896 | | | 110.092568870 71 | 0.0395922232317 | | |
| 300 | 317.50314375 07 | 0.00319998666667 | | | 110.092568870 71 | 0.0389959104951 | | |
| 301 | 318.05043756818 | 7.04000000e-005 | | | 110.402198784 19 | 0.0389820535821 | | |
| 302 | 318.48123800067 | 0.00319998666667 | | | 110.402198784 19 | 0.0383787505698 | | |
| 303 | 319.13826209375 | 7.04000000e-005 | | | 111.577832249 38 | 0.0383792137559 | | |
| 304 | 320.55396007824 | 0.00441154324249 | | | 111.577832249 38 | 0.0378035356202 | | |
| 305 | 320.89322866825 | 0.0023896 | | | 112.387335517 43 | 0.0378039992751 | | |
| 306 | 321.71785102504 | 7.04000000e-005 | | | 112.387335517 43 | 0.0372257850058 | | |
| 307 | 328.74700006072 | 0.00401013333333 | | | 112.670326418 17 | 0.0372618248327 | | |
| 308 | 329.54019738596 | 7.04000000e-005 | | | 112.670326418 17 | 0.0367007808015 | | |
| 309 | 329.59410024625 | 0.00319998666667 | | | 112.935377010 56 | 0.0367012349095 | | |
| 310 | 330.25154826543 | 7.04000000e-005 | | | 112.935377010 56 | 0.0361473809246 | | |
| 311 | 331.82409794861 | 0.0023896 | | | 112.158157250 86 | 0.0361977929872 | | |
| 312 | 332.65527100726 | 0.00319998666667 | | | 113.158157250 86 | 0.0356927115032 | | |
| 313 | 334.9639900883 | 7.04000000e-005 | | | 113.956166817 53 | 0.0356726160315 | | |




| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 314 | 335.09402371435 | 0.0023896 | | | 113.95516581753 | 0.1023177263546 | | |
| 315 | 335.226769165 | 7.04000000e-005 | | | 115.35474805376 | 0.1023181719242 | | |
| 316 | 338.27802021741 | 0.00401013333333 | | | 115.35474805376 | 0.1021715167546 | | |
| 317 | 339.12370942336 | 7.04000000e-005 | | | 115.70934844898 | 0.1021719555222 | | |
| 318 | 339.94678173439 | 0.00646992229627 | | | 115.70934844898 | 0.1015333847752 | | |
| 319 | 341.73844857959 | 7.04000000e-005 | | | 115.99182234054 | 0.1015328247752 | | |
| 320 | 341.94584990019 | 0.00319986666667 | | | 115.99182234054 | 0.1009031799003 | | |
| 321 | 342.1131152377 | 0.0023896 | | | 115.96244133966 | 0.1009036171679 | | |
| 322 | 342.22094061418 | 0.00401013333333 | | | 115.96244133966 | 0.1002807553035 | | |
| 323 | 343.68656248206 | 7.04000000e-005 | | | 116.05963211753 | 0.1183543871847 | | |
| 324 | 347.46941288825 | 0.00615025685679 | | | 116.05963211753 | 0.1175292865499 | | |
| 325 | 348.5565422842 | 0.00319986666667 | | | 116.81442965086 | 0.1176774600027 | | |
| 326 | 348.96401228169 | 7.04000000e-005 | | | 116.81442965086 | 0.1169599046759 | | |
| 327 | 350 | 7.04000000e-005 | | | 117.73890073501 | 0.1169603338442 | | |
| 328 | | | | | 117.73890073501 | 0.1162514835336 | | |
| 329 | | | | | 117.95184931351 | 0.1162516100027 | | |
| 330 | | | | | 117.95184931351 | 0.1155515972919 | | |
| 331 | | | | | 118.06161512344 | 0.1155708735971 | | |
| 332 | | | | | 118.06161512344 | 0.1148788324578 | | |
| 333 | | | | | 118.77334646709 | 0.1148792539947 | | |
| 334 | | | | | 118.77334646709 | 0.1141954489114 | | |
| 335 | | | | | 118.77949962366 | 0.114195867959 | | |
| 336 | | | | | 118.77949962366 | 0.113520152764 | | |
| 337 | | | | | 118.88638546086 | 0.1228332737092 | | |
| 338 | | | | | 118.88638546086 | 0.1219120009227 | | |
| 339 | | | | | 119.40746835242 | 0.1219124150404 | | |
| 340 | | | | | 119.40746835242 | 0.1211994769407 | | |
| 341 | | | | | 119.8411734692 | 0.1212229280128 | | |
| 342 | | | | | 119.8411734692 | 0.1205181435476 | | |
| 343 | | | | | 121.08311495 | 0.120518355285 | | |
| 344 | | | | | 121.08311495 | 0.1198219138162 | | |
| 345 | | | | | 123.19833272179 | 0.1198450937776 | | |
| 346 | | | | | 123.19833272179 | 0.1191563288709 | | |
| 347 | | | | | 124.08534400608 | 0.1191567334686 | | |
| 348 | | | | | 124.08534400608 | 0.1184758378487 | | |




Run 3, The 2nd LAN, Using Simulation Set Up 350, Mean 1 sec, T1 Line 1.544 Mbps

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | Time 1 | Solid Bl... 2 | Time 2 | GrayPat ... 3 | Time 3 | GrayPat ... 4 | Time 4 | HGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 8.29000000e-005 | 8.29000000e-005 | | | 8.29000000e-005 | 8.29000000e-005 | | |
| 1 | 0.055585533333 | 0.055585533333 | | | 0.055585533333 | 0.055585533333 | | |
| 2 | 0.740874957837 | 8.29000000e-005 | | | 0.055585533333 | 0.027874166667 | | |
| 3 | 0.977800829609 | 0.004841333333 | | | 0.740874957837 | 0.027875166667 | | |
| 4 | 1.380806038507 | 0.018583025426 | | | 0.740874957837 | 0.018584111111 | | |
| 5 | 1.492869005170 | 0.010297664143 | | | 0.977800829609 | 0.020195488889 | | |
| 6 | 1.534315538186 | 8.29000000e-005 | | | 0.977800829609 | 0.015146616667 | | |
| 7 | 1.8568552 | 0.009012223487 | | | 1.380806038507 | 0.018112567302 | | |
| 8 | 2.184394817041 4 | 8.29000000e-005 | | | 1.380806038507 | 0.014490053342 | | |
| 9 | 2.1995144 | 0.055607959258 | | | 1.492869005170 | 0.016540568249 | | |
| 10 | 2.211929266667 | 0.172250046621 | | | 1.492869005170 | 0.013785222541 | | |
| 11 | 2.243995933333 | 0.062527842525 | | | 1.534315538186 | 0.013800139020 | | |
| 12 | 2.267448466667 | 0.000140005402 | | | 1.534315538186 | 0.011828905892 | | |
| 13 | 2.429481066667 | 0.059047169594 | | | 1.8568552 | 0.012116151387 4 | | |
| 14 | 2.8810568 | 0.007828667462 | | | 1.8568552 | 0.011476622014 | | |
| 15 | 2.925134466667 | 0.006513718214 | | | 2.184394817041 4 | 0.011489947014 | | |
| 16 | 3.447481066667 | 0.003563052235 | | | 2.184394817041 4 | 0.010210681958 | | |
| 17 | 3.525805588225 | 8.29000000e-005 | | | 2.1995144 | 0.015385241038 | | |
| 18 | 3.9291676 | 0.249821832095 | | | 2.1995144 | 0.014750391693 | | |
| 19 | 4.0267603 | 0.009968385551 | | | 2.211929266667 | 0.022075772157 3 | | |
| 20 | 4.113594952818 8 | 8.29000000e-005 | | | 2.211929266667 | 0.029159792879 3 | | |
| 21 | 4.144058533333 | 0.011210680106 | | | 2.243995933333 | 0.034854142158 8 | | |
| 22 | 4.2619226 | 0.138137318463 5 | | | 2.243995933333 | 0.031948300104 | | |
| 23 | 4.293089266666 | 0.146897053208 | | | 2.267448466667 | 0.031951297428 8 | | |
| 24 | 4.465009500735 | 8.29000000e-005 | | | 2.267448466667 | 0.029502736038 1 | | |
| 25 | 4.723911266666 | 0.139685612672 | | | 2.429481066667 | 0.034672329700 4 | | |
| 26 | 4.832569004746 1 | 8.29000000e-005 | | | 2.429481066667 | 0.032102977578 9 | | |
| 27 | 5.891138933332 | 0.201993172825 5 | | | 2.8810568 | 0.022652082275 | | |
| 28 | 6.817446657607 9 | 8.29000000e-005 | | | 2.8810568 | 0.030434610218 7 | | |
| 29 | 8.106578228742 6 | 8.29000000e-005 | | | 2.925134466667 | 0.030918958131 4 | | |
| 30 | 8.276507451440 7 | 0.469287517015 | | | 2.925134466667 | 0.028954294982 | | |
| 31 | 8.549665399999 | 0.215028385545 | | | 3.447481066667 | 0.041527995265 9 | | |
| 32 | 8.551700989246 | 0.008353132333 | | | 3.447481066667 | 0.039085172015 | | |
| 33 | 8.560825671766 | 8.29000000e-005 | | | 3.525805588225 | 0.039090048485 6 | | |
| 34 | 10.31051996667 | 0.006728915649 | | | 3.525805588225 | 0.035918379125 3 | | |
| 35 | 10.4019677 | 0.022853392505 7 | | | 3.610950272464 4 | 0.036922984680 8 | | |

Run 3, Data Delay within the 2nd LAN

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | Time 1 | Solid Bl... 2 | Time 2 | GrayPat ... 3 | Time 3 | GrayPat ... 4 | Time 4 | HGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 35 | 10.4019677 | 0.022853392505 7 | | | 3.610950272464 4 | 0.036922984680 8 | | |
| 36 | 11.464797440894 | 8.29000000e-005 | | | 3.610950272464 4 | 0.034979669597 6 | | |
| 37 | 11.899851466667 | 0.009734219253 3 | | | 3.9291676 | 0.048127104642 4 | | |
| 38 | 12.531543588374 | 8.29000000e-005 | | | 3.9291676 | 0.046729777816 2 | | |
| 39 | 13.3600784 | 0.016069245765 | | | 4.0267603 | 0.048219219351 | | |
| 40 | 13.409329850501 | 8.29000000e-005 | | | 4.0267603 | 0.044016204143 8 | | |
| 41 | 14.3065844 | 0.030379653377 9 | | | 4.113594952818 8 | 0.044022251762 8 | | |
| 42 | 14.362209607077 | 8.29000000e-005 | | | 4.113594952818 8 | 0.042021240319 1 | | |
| 43 | 14.5559474 | 0.550299946591 | | | 4.144058533333 | 0.042562197955 9 | | |
| 44 | 14.787462912941 | 8.29000000e-005 | | | 4.144058533333 | 0.040711557 61 | | |
| 45 | 15.0299572 | 0.014189912568 4 | | | 4.2619226 | 0.046717637978 | | |
| 46 | 15.046147560453 | 8.29000000e-005 | | | 4.2619226 | 0.044771069728 9 | | |
| 47 | 15.427632166667 | 0.000121097722 1 | | | 4.293089266666 | 0.050850114033 9 | | |
| 48 | 15.797607386862 | 8.29000000e-005 | | | 4.293089266666 | 0.048816109472 6 | | |
| 49 | 16.157793523334 | 1.504600388508 | | | 4.465009500735 | 0.048319425472 6 | | |
| 50 | 16.349157399293 | 8.29000000e-005 | | | 4.465009500735 | 0.046941756262 1 | | |
| 51 | 16.563909266667 | 0.510791499727 | | | 4.640852931002 7 | 0.046944497236 | | |
| 52 | 16.421728241848 | 8.29000000e-005 | | | 4.640852931002 7 | 0.045208421042 | | |
| 53 | 18.291177446592 | 0.007961866667 | | | 4.723911266666 | 0.052231635177 3 | | |
| 54 | 17.013652692082 | 0.006353132333 | | | 4.723911266666 | 0.050356219535 2 | | |
| 55 | 17.156377875308 | 8.29000000e-005 | | | 4.832569004746 1 | 0.050369180349 5 | | |
| 56 | 18.175989663207 | 0.176209497753 7 | | | 4.832569004746 1 | 0.048532312061 6 | | |
| 57 | 18.529757196654 | 0.196020110828 2 | | | 4.918761702134 9 | 0.048635170683 3 | | |
| 58 | 18.625259652239 | 8.29000000e-005 | | | 4.918761702134 9 | 0.047013996326 2 | | |
| 59 | 19.087936563207 | 0.006391247236 1 | | | 5.020057364263 3 | 0.047016716595 | | |
| 60 | 19.374664425408 | 0.004834133333 | | | 5.020057364263 3 | 0.046500091928 8 | | |
| 61 | 21.519938027584 | 8.29000000e-005 | | | 5.101522334257 | 0.046502756122 1 | | |
| 62 | 22.483176329875 | 0.196790448145 4 | | | 5.101522334257 | 0.044208084868 | | |
| 63 | 22.571154829875 | 0.431524315770 2 | | | 5.850575667987 | 0.044083395305 8 | | |
| 64 | 23.177537829875 | 0.025198712521 8 | | | 5.850575667987 | 0.042747534842 | | |
| 65 | 23.413810455026 | 0.004834133333 | | | 5.891138933332 | 0.048868891594 3 | | |
| 66 | 23.751002966541 | 0.203789715668 8 | | | 5.891138933332 | 0.047431377135 6 | | |
| 67 | 23.819795612482 | 0.004834133333 | | | 6.817446657607 9 | 0.047453915370 9 | | |
| 68 | 24.671993304666 | 8.29000000e-005 | | | 6.817446657607 9 | 0.046078563503 2 | | |
| 69 | 24.856876329875 | 0.254318751824 6 | | | 8.106578228742 6 | 0.046080922074 6 | | |
| 70 | 24.9695177335 | 0.0047444 | | | 8.106578228742 6 | 0.045800906163 7 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 72 | 25.390087992478 | 0.004834133333 | | | 8.275807454407 | 0.0562756794575 | | |
| 73 | 25.717751425221 | 8.29000000e-005 | | | 8.5466653999999 | 0.0620872575265 | | |
| 74 | 26.199518629875 | 0.89072130357 2 | | | 8.5466653999999 | 0.0604533923285 | | |
| 75 | 26.326289663208 | 1.2064171295725 | | | 8.5517008989486 | 0.0606205700478 | | |
| 76 | 25.794807915417 | 8.29000000e-005 | | | 8.5517008989486 | 0.0590661964568 | | |
| 77 | 27.683197563209 | 0.007847980316 6 | | | 8.560825671756 | 0.0592063220978 | | |
| 78 | 27.989620045588 | 8.29000000e-005 | | | 8.560825671756 | 0.0575916140454 | | |
| 79 | 28.521927263209 | 0.008003542074 2 | | | 10.061822013011 | 0.0575936865464 | | |
| 80 | 29.011236329875 | 0.7099256866027 8 | | | 10.061822013011 | 0.0561889524633 | | |
| 81 | 29.150444517505 | 0.016039305190 3 | | | 10.291373276056 | 0.0561909844345 | | |
| 82 | 29.44857831327 | 8.29000000e-005 | | | 10.291373276056 | 0.0548531038527 | | |
| 83 | 29.524131984173 | 0.039473946297 | | | 10.310519966667 | 0.05501321613 | | |
| 84 | 29.611148446293 | 8.29000000e-005 | | | 10.310519966667 | 0.0537339366851 | | |
| 85 | 29.472313550839 | 0.174208647211 2 | | | 10.4019677 | 0.0542654225573 | | |
| 86 | 30.618200061013 | 8.29000000e-005 | | | 10.4019677 | 0.0530321174992 | | |
| 87 | 30.726726484173 | 0.014228178345 2 | | | 11.454797440894 | 0.0520340015901 | | |
| 88 | 30.899205417505 | 0.008717750961 2 | | | 11.454797440894 | 0.0518654552215 | | |
| 89 | 31.771359401667 | 8.29000000e-005 | | | 11.899831466667 | 0.0520717841849 | | |
| 90 | 32.015897250084 | 0.125761526113 7 | | | 11.899831466667 | 0.0509397628765 | | |
| 91 | 32.125355709478 | 0.025213180204 2 | | | 12.531643588374 | 0.0509415910504 | | |
| 92 | 32.565270275674 | 8.29000000e-005 | | | 12.531643588374 | 0.049857727411 | | |
| 93 | 32.231402317506 | 0.146428620230 5 | | | 12.685425135906 | 0.0492594912408 | | |
| 94 | 33.597672117506 | 0.140749408638 | | | 12.685425135906 | 0.0488207518 4 | | |
| 95 | 34.033425450084 | 0.126493919888 | | | 12.785789475307 | 0.0488224789233 | | |
| 96 | 34.060240017506 | 0.149537423878 9 | | | 12.785789475307 | 0.0478261018024 | | |
| 97 | 34.213558186549 | 8.29000000e-005 | | | 12.851818860053 | 0.0478277935392 | | |
| 98 | 34.023430109822 | 0.006353123333 | | | 12.851818860053 | 0.0468712377664 | | |
| 99 | 35.031908060197 | 0.004834133333 | | | 13.241472965496 | 0.0468728957664 | | |
| 100 | 35.124185460839 | 0.155750013272 2 | | | 13.241472965496 | 0.0469538193788 | | |
| 101 | 35.290055788178 | 8.29000000e-005 | | | 13.3600784 | 0.0462689159391 | | |
| 102 | 36.708085460839 | 0.285428813512 | | | 13.3600784 | 0.0453791290941 | | |
| 103 | 36.876637535575 | 8.29000000e-005 | | | 13.409329850501 | 0.0453807233249 | | |
| 104 | 37.078970584173 | 0.189239675259 1 | | | 13.409329850501 | 0.0446244832622 | | |
| 105 | 37.094423130309 | 8.29000000e-005 | | | 13.441833192396 | 0.0446260474131 | | |
| 106 | 37.394923917506 | 0.189869635789 | | | 13.441833192396 | 0.0437014909795 | | |
| 107 | 37.460102584173 | 0.204546066204 4 | | | 14.3065844 | 0.0442640771532 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 108 | 37.703046165821 | 8.29000000e-005 | | | 14.3065844 | 0.0434592757504 | | |
| 109 | 38.091565450084 | 0.197844322658 | | | 14.362239507077 | 0.0434607930231 | | |
| 110 | 38.371381926045 | 8.29000000e-005 | | | 14.362239507077 | 0.0425846897612 | | |
| 111 | 38.897883394173 | 1.1662068764606 | | | 14.433329890401 | 0.0425861779692 | | |
| 112 | 39.533870584173 | 0.254274879440 7 | | | 14.433329890401 | 0.0419372975539 | | |
| 113 | 39.589514002023 | 8.29000000e-005 | | | 14.5559474 | 0.0415916830023 | | |
| 114 | 40.414518317507 | 0.040249472504 8 | | | 14.5559474 | 0.0407021712264 | | |
| 115 | 40.910558784173 | 0.274055614785 9 | | | 14.767462912941 | 0.0407035005358 | | |
| 116 | 41.010893488146 | 8.29000000e-005 | | | 14.767462912941 | 0.0498442174768 | | |
| 117 | 41.542545460084 | 0.308837254631 7 | | | 14.973840316072 | 0.0489456225616 | | |
| 118 | 41.87681535084 | 0.012074879168 | | | 14.973840316072 | 0.0490148521855 | | |
| 119 | 42.349004831627 | 8.29000000e-005 | | | 15.0299572 | 0.0492513440633 | | |
| 120 | 43.148931317507 | 0.398927003611 9 | | | 15.0299572 | 0.0484439449803 | | |
| 121 | 44.825801150941 | 0.016105865994 | | | 15.045147560463 | 0.0484463039967 | | |
| 122 | 44.892582196721 | 8.29000000e-005 | | | 15.045147560463 | 0.0475639281258 | | |
| 123 | 45.984832984174 | 0.575955935686 | | | 15.268369154844 | 0.0476652652226 | | |
| 124 | 46.029518945192 | 8.29000000e-005 | | | 15.268369154844 | 0.0469086737111 | | |
| 125 | 46.143285460841 | 0.596230043686 9 | | | 15.427632166667 | 0.0469105958972 | | |
| 126 | 46.148812750841 | 0.018565356731 5 | | | 15.427632166667 | 0.0461776178353 | | |
| 127 | 46.193435917507 | 2.2343753367546 | | | 15.797607386862 | 0.0461789131488 | | |
| 128 | 46.247546650561 | 8.29000000e-005 | | | 15.797607386862 | 0.0454684483311 | | |
| 129 | 46.640131390791 | 0.007961866667 | | | 15.157793533334 | 0.0568146281543 | | |
| 130 | 46.772972117508 | 0.643125054291 3 | | | 15.157793533334 | 0.0575750125762 | | |
| 131 | 46.923738641356 | 8.29000000e-005 | | | 15.349157399293 | 0.0575762686368 | | |
| 132 | 48.013955460841 | 1.2097611031222 | | | 15.349157399293 | 0.0565576876124 | | |
| 133 | 48.237878644782 | 8.29000000e-005 | | | 15.363909266667 | 0.0741914213397 | | |
| 134 | 49.194693036322 | 0.007961866667 | | | 15.363909266667 | 0.0731003710259 | | |
| 135 | 49.269856550841 | 0.022188887856 2 | | | 15.421728241848 | 0.0731015901435 | | |
| 136 | 49.363440284175 | 0.466550714691 | | | 15.421728241848 | 0.0720421468081 | | |
| 137 | 49.70213669592 | 8.29000000e-005 | | | 15.820817732509 | 0.0720433482574 | | |
| 138 | 50.059195017508 | 1.3279036633274 | | | 15.820817732509 | 0.0710141457568 | | |
| 139 | 51.257505217508 | 1.2390379946958 | | | 15.991177446592 | 0.0711278985204 | | |
| 140 | 51.416575846554 | 8.29000000e-005 | | | 15.991177446592 | 0.0701269971327 | | |
| 141 | 52.826853917508 | 0.374612382082 | | | 17.013652892082 | 0.0702156778839 | | |
| 142 | 53.824028117508 | 0.036227168826 | | | 17.013652892082 | 0.0692403815244 | | |
| 143 | 53.992217962125 | 8.29000000e-005 | | | 17.156377876336 | 0.0692415129133 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat... | 3 Time | 3 GrayPat... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 144 | 54.079990584175 | 0.460054785251 | | | 17.155377875036 | 0.058292999078 | | |
| 145 | 54.427380594284 | 8.29000000e-005 | | | 18.175869563207 | 0.070706827741 | | |
| 146 | 54.518005912985 | 0.007951866667 | | | 18.175869563207 | 0.059751030101 | | |
| 147 | 54.571157288124 | 8.29000000e-005 | | | 18.529757719654 | 0.072402505181 | | |
| 148 | 54.805128384175 | 0.008335260493 | | | 18.529757719654 | 0.071434139446 | | |
| 149 | 55.043424755155 | 8.29000000e-005 | | | 18.625259863239 | 0.071456191779 | | |
| 150 | 55.565693259842 | 0.012283535693 | | | 18.625259863239 | 0.070495071557 | | |
| 151 | 55.607805149806 | 8.29000000e-005 | | | 18.844048864047 | 0.070497162246 | | |
| 152 | 55.420391984175 | 0.500047828558 | | | 18.844048864047 | 0.069581147636 | | |
| 153 | 55.502252117508 | 0.999492952259 | | | 19.087936563207 | 0.059664179946 | | |
| 154 | 55.805181317508 | 0.008714248546 | | | 19.087936563207 | 0.058771431864 | | |
| 155 | 57.083201367094 | 8.29000000e-005 | | | 19.374664425408 | 0.058820457047 | | |
| 156 | 58.053195917508 | 0.488835490944 | | | 19.374664425408 | 0.057952140406 | | |
| 157 | 58.053572082916 | 8.29000000e-005 | | | 21.519938027584 | 0.057963197077 | | |
| 158 | 58.605639050842 | 0.014013395123 | | | 21.519938027584 | 0.057112577394 | | |
| 159 | 58.622231894802 | 8.29000000e-005 | | | 22.165707205989 | 0.057114693984 | | |
| 160 | 58.812004417508 | 0.021461052724 | | | 22.165707205989 | 0.056286117517 | | |
| 161 | 58.928118784175 | 1.477102158503 | | | 22.593235022898 | 0.056287140974 | | |
| 162 | 59.128785384175 | 0.534556698164 | | | 22.593235022898 | 0.055478761209 | | |
| 163 | 59.585024782751 | 8.29000000e-005 | | | 22.483176329875 | 0.057842059543 | | |
| 164 | 59.990935608842 | 0.011911279204 | | | 22.483176329875 | 0.057024651453 | | |
| 165 | 60.792554678142 | 8.29000000e-005 | | | 22.571154829875 | 0.072223773271 | | |
| 166 | 62.660518584175 | 0.005483137622 | | | 22.571154829875 | 0.071353964022 | | |
| 167 | 62.762190050842 | 0.007786397047 | | | 23.177537629875 | 0.071653927325 | | |
| 168 | 62.940551309786 | 8.29000000e-005 | | | 23.177537629875 | 0.070820822292 | | |
| 169 | 63.485229917509 | 0.790592726142 | | | 23.413810455025 | 0.070877694451 | | |
| 170 | 63.488493717509 | 0.010119911234 | | | 23.413810455025 | 0.070053552172 | | |
| 171 | 63.604595874252 | 8.29000000e-005 | | | 23.751002996541 | 0.072423183074 | | |
| 172 | 64.574612845186 | 8.29000000e-005 | | | 23.751002996541 | 0.071507325939 | | |
| 173 | 65.270130550843 | 0.005220404725 | | | 23.819795512482 | 0.071648297448 | | |
| 174 | 65.285229160233 | 0.004634133333 | | | 23.819795512482 | 0.070832134973 | | |
| 175 | 65.518105967396 | 8.29000000e-005 | | | 24.671953304665 | 0.070832077019 | | |
| 176 | 66.001061117751 | 0.006109854203 | | | 24.671953304665 | 0.070037199749 | | |
| 177 | 66.001587430403 | 8.29000000e-005 | | | 24.855976629875 | 0.072900331792 | | |
| 178 | 66.338598784175 | 0.846189693059 | | | 24.855976629875 | 0.072090328105 | | |
| 179 | 66.710623924449 | 8.29000000e-005 | | | 24.9695177335 | 0.072143043614 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat... | 3 Time | 3 GrayPat... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 180 | 67.216895384177 | 0.000110690998 | | | 24.9695177335 | 0.071350262961 | | |
| 181 | 67.237876543128 | 8.29000000e-005 | | | 24.996528395444 | 0.071351173508 | | |
| 182 | 68.067725450844 | 0.911760420376 | | | 24.996528395444 | 0.070575617712 | | |
| 183 | 68.212120292537 | 8.29000000e-005 | | | 25.390087992478 | 0.070528152639 | | |
| 184 | 68.814252117511 | 1.847229093831 | | | 25.390087992478 | 0.069868720007 | | |
| 185 | 69.229535917511 | 0.926399730823 | | | 25.717751425221 | 0.069869611428 | | |
| 186 | 69.980319853844 | 1.924938546355 | | | 25.717751425221 | 0.069126317 | | |
| 187 | 70.179595917511 | 2.817180956 | | | 26.199618629875 | 0.078495693259 | | |
| 188 | 70.422685917511 | 2.854284280416 | | | 26.199618629875 | 0.077669428045 | | |
| 189 | 71.120978727714 | 0.004634133333 | | | 26.326289663208 | 0.090385554842 | | |
| 190 | 71.274729917512 | 0.011253447023 | | | 26.326289663208 | 0.089472114167 | | |
| 191 | 71.395521950846 | 0.023724696877 | | | 26.794807915417 | 0.089428074583 | | |
| 192 | 72.192246650846 | 0.010576928782 | | | 26.794807915417 | 0.088506160412 | | |
| 193 | 73.05247525439 | 8.29000000e-005 | | | 27.102297958042 | 0.088506995804 | | |
| 194 | 73.809462117512 | 0.947109180027 | | | 27.102297958042 | 0.087603581225 | | |
| 195 | 73.809535017512 | 0.000108513370 | | | 27.386446869476 | 0.087604704048 | | |
| 196 | 74.219613117513 | 0.005476089245 | | | 27.386446869476 | 0.086719803040 | | |
| 197 | 74.320181579918 | 8.29000000e-005 | | | 27.683197563209 | 0.086799080568 | | |
| 198 | 74.482875117513 | 0.020594739215 | | | 27.683197563209 | 0.085931089763 | | |
| 199 | 75.228886870049 | 8.29000000e-005 | | | 27.888923046588 | 0.085931918763 | | |
| 200 | 75.455623917513 | 1.049911981 | | | 27.888923046588 | 0.085081107685 | | |
| 201 | 75.460927900994 | 0.015704013782 | | | 28.573758614211 | 0.085081928479 | | |
| 202 | 75.682558924528 | 0.010132169997 | | | 28.573758614211 | 0.084247791924 | | |
| 203 | 75.926137634528 | 0.018129920725 | | | 28.821927263209 | 0.084329199199 | | |
| 204 | 76.174631461495 | 8.29000000e-005 | | | 28.821927263209 | 0.083510469110 | | |
| 205 | 76.235258578418 | 0.973948187461 | | | 29.011236329875 | 0.090402951499 | | |
| 206 | 76.395556567651 | 0.013869046369 | | | 29.011236329875 | 0.089533592350 | | |
| 207 | 76.594653298418 | 0.979548207600 | | | 29.150444517506 | 0.089587835957 | | |
| 208 | 76.705267192212 | 8.29000000e-005 | | | 29.150444517506 | 0.088803566915 | | |
| 209 | 79.549350117515 | 0.021991546827 | | | 29.446878331327 | 0.088804456153 | | |
| 210 | 79.589994524735 | 8.29000000e-005 | | | 29.446878331327 | 0.087996394713 | | |
| 211 | 79.718800550848 | 0.015242125300 | | | 29.510750263933 | 0.087997171788 | | |
| 212 | 79.727146984181 | 3.231836759722 | | | 29.510750263933 | 0.087174773274 | | |
| 213 | 80.591146584182 | 0.021427529516 | | | 29.524131984173 | 0.087543396303 | | |
| 214 | 80.809852584182 | 2.209694649328 | | | 29.524131984173 | 0.086733309207 | | |
| 215 | 81.211468498624 | 8.29000000e-005 | | | 29.611149445293 | 0.086733856513 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 216 | 81.479593550849 | 1.1307697732927 | | | 29.611148446293 | 0.0859381429673 | | |
| 217 | 81.785626984182 | 1.1091081335637 | | | 29.871807312333 | 0.0859289035178 | | |
| 218 | 82.249244294014 | 8.29000000e-005 | | | 29.871807312333 | 0.0851576407586 | | |
| 219 | 83.133337250849 | 2.3886375483977 | | | 30.154050769166 | 0.0851583943349 | | |
| 220 | 83.540075917516 | 1.2063069788443 | | | 30.154050769166 | 0.0843912015526 | | |
| 221 | 84.042355317103 | 8.29000000e-005 | | | 30.473313550839 | 0.0859606039068 | | |
| 222 | 85.310108470946 | 0.0063531335333 | | | 30.473313550839 | 0.0851931252707 | | |
| 223 | 85.354692117517 | 3.5940393944097 | | | 30.518200061013 | 0.0851938654622 | | |
| 224 | 85.622453734894 | 8.29000000e-005 | | | 30.518200061013 | 0.0844399374394 | | |
| 225 | 88.452246450851 | 2.5927286429459 | | | 30.726726484173 | 0.0845658505309 | | |
| 226 | 88.522565450851 | 1.2913093809218 | | | 30.726726484173 | 0.0839240448245 | | |
| 227 | 89.826702117518 | 2.5705825582431 | | | 30.899505417506 | 0.0839005163242 | | |
| 228 | 89.556635017518 | 1.4003081068241 | | | 30.899505417506 | 0.083170946617 | | |
| 229 | 89.845028384185 | 0.0227037463073 | | | 31.771359401657 | 0.0831716674866 | | |
| 230 | 90.022450084185 | 2.6919882890821 | | | 31.771359401657 | 0.0824546703531 | | |
| 231 | 90.322910922846 | 2.7615602761248 | | | 32.01589725084 | 0.0835038214403 | | |
| 232 | 90.561000984185 | 0.0053349406607 | | | 32.01589725084 | 0.0828248144194 | | |
| 233 | 90.871945450852 | 1.4598056989652 | | | 32.125055709478 | 0.0830403116861 | | |
| 234 | 91.004887524518 | 0.0146376346489 | | | 32.125055709478 | 0.0823365802311 | | |
| 235 | 91.163591890704 | 8.29000000e-005 | | | 32.566270275574 | 0.0823372827735 | | |
| 236 | 91.562737217519 | 0.0162807278918 | | | 32.566270275574 | 0.0816463728342 | | |
| 237 | 91.726170904954 | 8.29000000e-005 | | | 33.092887331001 | 0.0816460894729 | | |
| 238 | 92.064906250852 | 4.3112541237439 | | | 33.092887331001 | 0.0809656855606 | | |
| 239 | 92.940346450853 | 2.9865901122929 | | | 33.231402317506 | 0.0821859323959 | | |
| 240 | 93.279394033999 | 8.29000000e-005 | | | 33.231402317506 | 0.0815067998141 | | |
| 241 | 93.484725450853 | 1.5167882274724 | | | 33.597672117506 | 0.0825899275075 | | |
| 242 | 93.794404594186 | 0.0063102321252 | | | 33.597672117506 | 0.0819923051508 | | |
| 243 | 93.84605821752 | 0.0117468987272 | | | 34.03342546084 | 0.0830291409048 | | |
| 244 | 93.93127901173 | 8.29000000e-005 | | | 34.03342546084 | 0.0823541072989 | | |
| 245 | 94.081570584186 | 1.5473893824839 | | | 34.060240017506 | 0.0835698586626 | | |
| 246 | 94.282690317752 | 1.5614275607702 | | | 34.060240017506 | 0.0828956081796 | | |
| 247 | 94.364646450853 | 3.1258848402538 | | | 34.213558186546 | 0.0828965576728 | | |
| 248 | 94.927100886173 | 0.0079613866667 | | | 34.213558186546 | 0.0822334041142 | | |
| 249 | 95.423246450854 | 1.5867517440184 | | | 34.323430109822 | 0.0822842291808 | | |
| 250 | 95.747204508854 | 0.0001517164209 | | | 34.323430109822 | 0.0816311797429 | | |
| 251 | 95.946746450854 | 3.1997468961552 | | | 35.031908060197 | 0.0816695468804 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : GrayPa... |
|---|---|---|---|---|---|---|---|---|
| 252 | 95.948254497254 | 8.29000000e-005 | | | 35.031908060197 | 0.0810264785901 | | |
| 253 | 96.462113117521 | 0.0134663710911 | | | 35.124185450839 | 0.0822529566473 | | |
| 254 | 96.817139807141 | 8.29000000e-005 | | | 35.124185450839 | 0.0816102562048 | | |
| 255 | 98.111841584188 | 0.0271599791535 | | | 35.290055788178 | 0.0816109903851 | | |
| 256 | 99.466396884617 | 8.29000000e-005 | | | 35.290055788178 | 0.0809782611954 | | |
| 257 | 100.64565541752 | 0.0128723442162 | | | 35.534209863273 | 0.0809789038311 | | |
| 258 | 100.739937360111 | 8.29000000e-005 | | | 35.534209863273 | 0.0803559891852 | | |
| 259 | 100.77609211752 | 1.3047118517222 | | | 35.708085450839 | 0.0825532421197 | | |
| 260 | 101.09987058419 | 1.3209282870323 | | | 35.708085450839 | 0.0819230646989 | | |
| 261 | 101.31562710358 | 8.29000000e-005 | | | 35.876637535575 | 0.0819236975204 | | |
| 262 | 101.69728858419 | 0.0111538962888 | | | 35.876637535575 | 0.0813030634612 | | |
| 263 | 102.11479667683 | 8.29000000e-005 | | | 35.990391794816 | 0.0813036914815 | | |
| 264 | 105.03930073483 | 0.0131926386969 | | | 35.990391794816 | 0.0806923855305 | | |
| 265 | 105.20247318059 | 8.29000000e-005 | | | 37.078970584173 | 0.0821156913594 | | |
| 266 | 105.27282575086 | 0.0069696211228 | | | 37.078970584173 | 0.0815028878925 | | |
| 267 | 105.77102705234 | 8.29000000e-005 | | | 37.084423130209 | 0.0815035063492 | | |
| 268 | 107.68472391752 | 1.3051221994156 | | | 37.084423130209 | 0.0809997765726 | | |
| 269 | 107.855205284 | 0.0047444 | | | 37.394623917506 | 0.0823082184191 | | |
| 270 | 108.13702467234 | 8.29000000e-005 | | | 37.394623917506 | 0.0817010258366 | | |
| 271 | 108.95212925086 | 3.9258387591463 | | | 37.460102584173 | 0.0832050234764 | | |
| 272 | 109.01696525086 | 1.3035704670739 | | | 37.460102584173 | 0.0825976974658 | | |
| 273 | 109.15304381753 | 2.5879438489856 | | | 37.703045165821 | 0.0825983025751 | | |
| 274 | 109.27373878419 | 1.2870289861786 | | | 37.703045165821 | 0.0819997641506 | | |
| 275 | 109.49223604353 | 8.29000000e-005 | | | 38.007819271434 | 0.0820003648752 | | |
| 276 | 109.7573792426 | 0.0048341333333 | | | 38.007819271434 | 0.0814104941927 | | |
| 277 | 109.85206112355 | 8.29000000e-005 | | | 38.09156546084 | 0.0828337746406 | | |
| 278 | 110.0384798437 | 0.0047444 | | | 38.09156546084 | 0.0822421048218 | | |
| 279 | 110.18052442628 | 8.29000000e-005 | | | 38.371381926046 | 0.0822426958646 | | |
| 280 | 110.79191591753 | 2.7825825948866 | | | 38.371381926046 | 0.0815594154259 | | |
| 281 | 111.22691592314 | 8.29000000e-005 | | | 38.897883384173 | 0.0829303861809 | | |
| 282 | 114.31563591753 | 0.0071773553709 | | | 38.897883384173 | 0.0822970735021 | | |
| 283 | 114.40867901966 | 8.29000000e-005 | | | 39.533870584173 | 0.0910877417672 | | |
| 284 | 114.48344546085 | 1.4110091383526 | | | 39.533870584173 | 0.090460764652 | | |
| 285 | 114.7906108507 | 8.29000000e-005 | | | 39.589514002023 | 0.0904613442723 | | |
| 286 | 115.03579211753 | 1.4443486307358 | | | 39.589514002023 | 0.0898232099371 | | |
| 287 | 115.0592754688 | 0.0047444 | | | 39.68381442106 | 0.0898237856315 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 288 | 115.39750739419 | 2.80822598598678 | | | 39.68081442106 | 0.0892043112479 | | |
| 289 | 115.42503875086 | 0.0130458190151 | | | 40.41461881817507 | 0.0894462583472 | | |
| 290 | 115.40543894984 | 8.29000000e-005 | | | 40.41461881817507 | 0.0888896892647 | | |
| 291 | 115.95269010978 | 0.0046941333333 | | | 40.91055876417 3 | 0.0907438071112 | | |
| 292 | 116.04356589419 | 0.0045290044457 | | | 40.91055876417 3 | 0.0901314980832 | | |
| 293 | 116.32864545086 | 1.5017911950041 | | | 41.01089348814 6 | 0.0901320520288 | | |
| 294 | 116.42267878419 | 1.4996873465164 | | | 41.01089348814 6 | 0.0895320815097 | | |
| 295 | 116.54390192028 | 0.0395399200184 | | | 41.18002540851 1 | 0.0895320817446 | | |
| 296 | 116.89915725086 | 1.5253683852349 | | | 41.18002540851 1 | 0.0889227920687 | | |
| 297 | 118.55357051753 | 0.0061459561191 | | | 41.36417224465 1 | 0.0889220484446 | | |
| 298 | 119.14401752484 | 8.29000000e-005 | | | 41.36417224465 1 | 0.0883305261215 | | |
| 299 | 119.41928925086 | 1.5568293790007 | | | 41.54254645084 | 0.0902894411518 | | |
| 300 | 119.56642893887 | 8.29000000e-005 | | | 41.54254645084 | 0.0897908555812 | | |
| 301 | 119.78553211753 | 0.0437561782671 | | | 41.87681535084 | 0.0893708015684 | | |
| 302 | 120.11893507402 | 8.29000000e-005 | | | 41.87681535084 | 0.0892795460943 | | |
| 303 | 121.18281725086 | 3.1815498943 | | | 42.04903483627 | 0.0892800091789 | | |
| 304 | 121.38805477082 | 8.29000000e-005 | | | 42.04903483627 | 0.0886965617773 | | |
| 305 | 122.02049725086 | 9.2775941113020 | | | 43.14893131507 | 0.0913305927814 | | |
| 306 | 122.42051271889 | 8.29000000e-005 | | | 43.14893131507 | 0.0907110461658 | | |
| 307 | 124.78256381753 | 0.0074283708134 | | | 44.82580115084 1 | 0.0908156287152 | | |
| 308 | 124.85575591753 | 3.4724603576771 | | | 44.82580115084 1 | 0.0902297214302 | | |
| 309 | 125.12000725086 | 6.0569179870089 | | | 44.89258219672 1 | 0.0902302562719 | | |
| 310 | 125.15405501753 | 0.0122255208874 | | | 44.89258219672 1 | 0.0896518571932 | | |
| 311 | 126.58144267246 | 8.29000000e-005 | | | 46.29427534723 8 | 0.0896523886035 | | |
| 312 | 127.45465211753 | 3.5186758123381 | | | 46.29427534723 8 | 0.0890813542812 | | |
| 313 | 128.17154658716 | 8.29000000e-005 | | | 46.46322206280 2 | 0.0890818823066 | | |
| 314 | 129.3834771842 | 0.0071140001799 | | | 46.46322206280 2 | 0.0885518072925 | | |
| 315 | 129.90414629686 | 8.29000000e-005 | | | 46.98468329417 4 | 0.0921633583306 | | |
| 316 | 130.42846546087 | 3.8832458860952 | | | 46.98468329417 4 | 0.0915837200359 | | |
| 317 | 130.48753563703 | 8.29000000e-005 | | | 46.02961894519 2 | 0.0915842414196 | | |
| 318 | 130.85702691753 | 0.0110990222886 | | | 46.02961894519 2 | 0.0910118399107 | | |
| 319 | 131.25659250788 | 0.0048341333333 | | | 46.14038546084 1 | 0.0947382776837 | | |
| 320 | 131.32965279248 | 8.29000000e-005 | | | 46.14038546084 1 | 0.0941498411764 | | |
| 321 | 131.65178375087 | 0.0134189239995 | | | 46.14881275084 1 | 0.0942657750629 | | |
| 322 | 132.06460358942 | 1.7976768066509 | | | 46.14881275084 1 | 0.0936838375625 | | |
| 323 | 132.39768754081 | 8.29000000e-005 | | | 46.18343591750 7 | 0.1074763277277 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 324 | 132.4310187842 | 1.7262340699818 | | | 46.18343591750 7 | 0.1068169537539 | | |
| 325 | 132.73762558471 | 8.29000000e-005 | | | 46.24754650561 | 0.1068174723429 | | |
| 326 | 132.7776921753 | 9.4688204080232 | | | 46.24754650561 | 0.1061661462292 | | |
| 327 | 132.90696561584 | 8.29000000e-005 | | | 46.28594421639 | 0.1061666517798 | | |
| 328 | 134.5702719532 | 0.0047444 | | | 46.28594421639 | 0.1055202175255 | | |
| 329 | 134.92159059842 | 7.0504813955713 | | | 46.64013139079 1 | 0.1055714712639 | | |
| 330 | 135.76607973039 | 8.29000000e-005 | | | 46.64013139079 1 | 0.1049354985465 | | |
| 331 | 137.29971565087 | 10.642725775573 | | | 46.77297211750 8 | 0.1088097518846 | | |
| 332 | 137.3129905842 | 3.5530184270732 | | | 46.77297211750 8 | 0.1081581964841 | | |
| 333 | 137.54760599283 | 8.29000000e-005 | | | 46.92370864136 5 | 0.1081586928913 | | |
| 334 | 138.84488275872 | 0.0195329978398 | | | 46.92370864136 5 | 0.1075148911479 | | |
| 335 | 138.93289811668 | 8.29000000e-005 | | | 47.46341755208 6 | 0.1075153846003 | | |
| 336 | 140.4109587842 | 1.8414951019958 | | | 47.46341755208 6 | 0.1068791989925 | | |
| 337 | 140.5823779842 | 3.6948204769933 | | | 48.01395546084 1 | 0.1140375485152 | | |
| 338 | 140.88556777286 | 8.29000000e-005 | | | 48.01395546084 1 | 0.1133587395057 | | |
| 339 | 142.43642365926 | 0.0048341333333 | | | 48.23787854478 2 | 0.1130672271527 | | |
| 340 | 142.5514627627 | 9.0079618665687 | | | 48.23787854478 2 | 0.1127042609121 | | |
| 341 | 142.58885405087 | 3.8463330544612 | | | 48.61394214180 8 | 0.1127047467074 | | |
| 342 | 143.61251821423 | 8.29000000e-005 | | | 48.61394214180 8 | 0.1120494855579 | | |
| 343 | 144.00940946154 | 0.0063531333333 | | | 49.04768434946 2 | 0.1120499675347 | | |
| 344 | 144.01481205087 | 1.8599765197898 | | | 49.04768434946 2 | 0.1114022798511 | | |
| 345 | 144.11168528532 | 8.29000000e-005 | | | 49.08573249872 2 | 0.1114027590518 | | |
| 346 | 144.50679211754 | 3.8818830941208 | | | 49.08573249872 2 | 0.1107625133101 | | |
| 347 | 144.68539127711 | 0.0048341333333 | | | 49.19469308632 2 | 0.1108082711646 | | |
| 348 | 144.71223604881 | 8.29000000e-005 | | | 49.19469308632 2 | 0.1101750810436 | | |
| 349 | 146.04024345568 | 0.0106907469207 | | | 49.26985655084 1 | 0.1103075889742 | | |
| 350 | 146.22988546087 | 3.8424655529588 | | | 49.26985655084 1 | 0.1095808413096 | | |
| 351 | 146.28561928421 | 1.9872710172512 | | | 49.36344328417 5 | 0.1122754476429 | | |
| 352 | 146.35138426827 | 8.29000000e-005 | | | 49.36344328417 5 | 0.1116411220308 | | |
| 353 | 146.42888081754 | 0.0091351045409 | | | 49.70213889592 | 0.1116415914416 | | |
| 354 | 147.03222946998 | 8.29000000e-005 | | | 49.70213889592 | 0.1110143914896 | | |
| 355 | 147.24957399367 | 0.0115861928264 | | | 50.05919501750 8 | 0.1184746244297 | | |
| 356 | 148.29905797938 | 8.29000000e-005 | | | 50.05919501750 8 | 0.1178126555782 | | |
| 357 | 148.44152384625 | 0.0048341333333 | | | 51.25750531750 8 | 0.1247346555448 | | |
| 358 | 148.77146868421 | 0.0074409992076 | | | 51.25750531750 8 | 0.1240416852094 | | |
| 359 | 149.43464614246 | 8.29000000e-005 | | | 51.41857584865 4 | 0.1240421467940 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 360 | 149.45401211754 | 2.108664178952 | | | 51.41557546654 | 0.12235680007 23 | | |
| 361 | 149.68008462263 | 8.29000000e-005 | | | 51.90078039625 | 0.123057280804 | | |
| 362 | 150.0235521175 4 | 2.141207981402 1 | | | 51.90078039625 | 0.122679007852 | | |
| 363 | 150.46751058421 | 2.159791610402 | | | 52.826863917508 | 0.124737261127 3 | | |
| 364 | 151.08586101754 | 0.014661227705 9 | | | 52.826863917508 | 0.124056367496 | | |
| 365 | 151.39929878421 | 1.892995888253 | | | 53.824328117508 | 0.124235994157 | | |
| 366 | 151.79109921754 | 0.008249958835 | | | 53.824328117508 | 0.123578081155 | | |
| 367 | 152.26659966455 | 8.29000000e-005 | | | 53.992217962125 | 0.123578768659 | | |
| 368 | 152.71675261754 | 6.185025806426 5 | | | 53.992217962125 | 0.122910765368 9 | | |
| 369 | 152.72222631259 | 0.0023896 | | | 54.079990584175 | 0.125345115559 5 | | |
| 370 | 152.92833389322 | 8.29000000e-005 | | | 54.079990584175 | 0.124671217088 7 | | |
| 371 | 156.33001792178 | 0.004834133333 | | | 54.427380594284 | 0.124571662787 7 | | |
| 372 | 156.48799142196 | 8.29000000e-005 | | | 54.427380594284 | 0.124004994038 | | |
| 373 | 156.78001741754 | 15.39555524855 6 | | | 54.518005912985 | 0.124047546230 9 | | |
| 374 | 157.31001938421 | 0.005009514373 | | | 54.518005912985 | 0.123387718857 3 | | |
| 375 | 157.47679143204 | 8.29000000e-005 | | | 54.671167288124 | 0.123381568147 | | |
| 376 | 157.97052015088 | 0.022184671772 2 | | | 54.671167288124 | 0.122753312408 3 | | |
| 377 | 158.75295106338 | 8.29000000e-005 | | | 54.797192968342 | 0.122757510327 | | |
| 378 | 158.75679921754 | 5.303751178054 1 | | | 54.797192968342 | 0.122089773395 5 | | |
| 379 | 158.93129249702 | 8.29000000e-005 | | | 54.805128384175 | 0.122138431877 | | |
| 380 | 159.33191051754 | 0.009738425550 2 | | | 54.805128384175 | 0.121484200297 | | |
| 381 | 159.58622388421 | 0.005851412240 4 | | | 55.043424756155 | 0.121449604061 1 | | |
| 382 | 159.86598711171 | 8.29000000e-005 | | | 55.043424756155 | 0.120861849508 7 | | |
| 383 | 159.98429211755 | 1.814813543154 | | | 55.565668250842 | 0.120925826258 6 | | |
| 384 | 160.21487725088 | 1.844992865217 4 | | | 55.565668250842 | 0.120269267573 4 | | |
| 385 | 160.46337301755 | 3.636619473530 1 | | | 55.607835149806 | 0.120299697197 | | |
| 386 | 160.53684468421 | 0.053281802476 1 | | | 55.607835149806 | 0.119579555756 | | |
| 387 | 160.84048529956 | 8.29000000e-005 | | | 56.282422370443 | 0.119680022895 1 | | |
| 388 | 161.39405878421 | 1.843082758852 | | | 56.282422370443 | 0.119066279188 | | |
| 389 | 161.53353965088 | 1.867294325737 | | | 56.351386819443 | 0.119066704316 2 | | |
| 390 | 161.77115637559 | 8.29000000e-005 | | | 56.351386819443 | 0.118469221130 9 | | |
| 391 | 162.08952925088 | 3.888814717120 7 | | | 56.423391984175 | 0.121025791684 6 | | |
| 392 | 162.42052925088 | 1.836213152781 5 | | | 56.423391984175 | 0.120411447564 6 | | |
| 393 | 162.90529878421 | 7.227895875415 | | | 56.502252117508 | 0.125485014327 3 | | |
| 394 | 163.29026546088 | 3.714808857390 4 | | | 56.502252117508 | 0.124851251628 7 | | |
| 395 | 163.61217591755 | 1.879340692503 4 | | | 56.806181317508 | 0.124895262985 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 396 | 163.66146987687 | 0.004834133333 | | | 56.806181317508 | 0.124267648598 1 | | |
| 397 | 164.21213591755 | 5.630375318451 | | | 57.008301367394 | 0.124258065181 | | |
| 398 | 165.20042546088 | 1.798799434965 7 | | | 57.008301367394 | 0.123648724855 1 | | |
| 399 | 165.63743556846 | 8.29000000e-005 | | | 57.532906775218 | 0.123547139355 1 | | |
| 400 | 167.28235595088 | 0.019325109484 | | | 57.532906775218 | 0.123031979467 8 | | |
| 401 | 167.38270742991 | 0.006353133333 | | | 57.557477750534 | 0.123032391895 8 | | |
| 402 | 167.48251842944 | 0.004834133333 | | | 57.557477750534 | 0.122423320648 6 | | |
| 403 | 167.53585505088 | 0.007801902141 | | | 58.050195917508 | 0.124840296326 6 | | |
| 404 | 167.7096522404 | 8.29000000e-005 | | | 58.050195917508 | 0.124223096709 2 | | |
| 405 | 167.85520148421 | 3.481863644420 6 | | | 58.053570062916 | 0.124228715083 6 | | |
| 406 | 169.14081088948 | 8.29000000e-005 | | | 58.053570062916 | 0.123619750794 | | |
| 407 | 169.69395878422 | 1.846052885481 | | | 58.605539050842 | 0.123688426201 4 | | |
| 408 | 169.69652910073 | 8.29000000e-005 | | | 58.605539050842 | 0.123085071010 2 | | |
| 409 | 169.80159198422 | 0.006595097919 9 | | | 58.632231894632 | 0.123085475400 5 | | |
| 410 | 169.90757878422 | 1.625482088290 8 | | | 58.632231894632 | 0.122487973062 7 | | |
| 411 | 169.98519058422 | 1.628560788648 | | | 58.755355931748 | 0.122488375519 9 | | |
| 412 | 169.99805593893 | 8.29000000e-005 | | | 58.755355931748 | 0.121398844207 2 | | |
| 413 | 171.32409725088 | 1.727238558129 1 | | | 58.812004417508 | 0.126348146904 4 | | |
| 414 | 171.47129271755 | 4.961956795351 6 | | | 58.812004417508 | 0.125740703890 5 | | |
| 415 | 171.68466258422 | 3.386279903170 4 | | | 58.936118784175 | 0.122842156620 7 | | |
| 416 | 172.11986870596 | 8.29000000e-005 | | | 58.936118784175 | 0.122285482188 | | |
| 417 | 173.39408878422 | 6.744261183535 6 | | | 59.128785384175 | 0.124764236769 8 | | |
| 418 | 173.58168405528 | 8.29000000e-005 | | | 59.128785384175 | 0.134122501313 8 | | |
| 419 | 176.25707211755 | 1.789204756612 4 | | | 59.685324782751 | 0.134122896075 7 | | |
| 420 | 176.67004575088 | 0.017315552214 7 | | | 59.685324782751 | 0.133487242539 8 | | |
| 421 | 176.83882391755 | 10.29259756598 1 | | | 59.882378327823 | 0.133487625430 7 | | |
| 422 | 177.19819058422 | 5.278004188424 1 | | | 59.882378327823 | 0.132857976773 1 | | |
| 423 | 177.30155591755 | 3.579428033033 | | | 59.972424055168 | 0.132258367810 8 | | |
| 424 | 177.46215574927 | 8.29000000e-005 | | | 59.972424055168 | 0.132234619805 1 | | |
| 425 | 179.25825988422 | 0.013344425760 4 | | | 59.993935650842 | 0.132280541103 7 | | |
| 426 | 179.46136211044 | 0.016171796108 8 | | | 59.993935650842 | 0.131672361005 1 | | |
| 427 | 179.47351030341 | 8.29000000e-005 | | | 60.792554676142 | 0.131672748388 3 | | |
| 428 | 179.56896911755 | 1.724336672414 3 | | | 60.792554676142 | 0.131060317900 4 | | |
| 429 | 179.59146211755 | 5.118452192381 | | | 60.950364607651 | 0.131060702581 8 | | |
| 430 | 179.66877219275 | 8.29000000e-005 | | | 60.950364607651 | 0.130439400599 | | |
| 431 | 180.04407688422 | 1.751108503857 3 | | | 61.047994958025 | 0.130454223862 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 432 | 180.04628508422 | 3.4185120878446 | | | 61.047994958025 | 0.12985315186 | | |
| 433 | 180.14711495595 | 8.29000000e-005 | | | 61.952515132927 | 0.12985055039945 | | |
| 434 | 180.68057878422 | 3.3546675044898 | | | 61.952515132927 | 0.12925787548821 | | |
| 435 | 180.75551878422 | 5.1510994738408 | | | 62.660518584175 | 0.12928301919423 | | |
| 436 | 181.15700598422 | 1.7268385404498 | | | 62.660518584175 | 0.12869268572 15 | | |
| 437 | 181.28125733578 | 8.29000000e-005 | | | 62.762190050842 | 0.12972815599622 | | |
| 438 | 181.95705725099 | 6.79504123722229 | | | 62.762190050842 | 0.12814303009659 | | |
| 439 | 182.09031709958 | 8.29000000e-005 | | | 62.940551009786 | 0.12814304077851 | | |
| 440 | 190.70146711756 | 1.64159225574 | | | 62.940551009786 | 0.12756357330607 | | |
| 441 | 190.70913410713 | 8.29000000e-005 | | | 63.485223917509 | 0.13114091601 3 | | |
| 442 | 194.60493754174 | 0.007961866667 | | | 63.485223917509 | 0.13965019115 8 | | |
| 443 | 195.04254617055 | 5.83591100192195 | | | 63.488493717509 | 0.13959610100 5 | | |
| 444 | 195.03115315586 | 8.29000000e-005 | | | 63.488493717509 | 0.13931046832959 | | |
| 445 | 197.03479441952 | 0.0047444 | | | 63.504959574262 | 0.13001084004 48 | | |
| 446 | 197.24292293631 | 8.29000000e-005 | | | 63.504959574262 | 0.12943043450 89 | | |
| 447 | 197.61651922536 | 0.007012977 4938 | | | 64.574612346186 | 0.12943083046992 | | |
| 448 | 197.64121547625 | 0.004834133333 | | | 64.574612346186 | 0.12985555565777 | | |
| 449 | 198.69991467789 | 8.29000000e-005 | | | 64.660494705784 | 0.12885592502 22 | | |
| 450 | 190.65079910227 | 0.008432370923 8 | | | 64.660494705784 | 0.12828576606 19 | | |
| 451 | 190.7781846556 | 0.016145075143 6 | | | 65.083328704168 | 0.12828513287 6 | | |
| 452 | 191.59227672789 | 0.017863046683 | | | 65.083328704168 | 0.12772099957258 | | |
| 453 | 191.62038325724 | 8.29000000e-005 | | | 65.270130650843 | 0.12774099310 48 | | |
| 454 | 191.64707811416 | 0.004834133333 | | | 65.270130650843 | 0.12718371240 33 | | |
| 455 | 191.87197846634 | 0.008159484220 7 | | | 65.285329160233 | 0.12720491477 24 | | |
| 456 | 192.06223563857 | 8.29000000e-005 | | | 65.285329160233 | 0.12664943479 53 | | |
| 457 | 194.98899486481 | 0.007961866667 | | | 65.362446989575 | 0.12667954464 78 | | |
| 458 | 195.95592652214 | 8.29000000e-005 | | | 65.362446989575 | 0.12611980004 98 | | |
| 459 | 196.93235650444 | 0.004834133333 | | | 65.613105957396 | 0.12612016346 46 | | |
| 460 | 196.96305647295 | 8.29000000e-005 | | | 65.613105957396 | 0.12557418875 09 | | |
| 461 | 197.03255310091 | 0.004834133333 | | | 65.663854676057 | 0.12557464782 53 | | |
| 462 | 197.07833280665 | 8.29000000e-005 | | | 65.663854676057 | 0.12503327802 05 | | |
| 463 | 197.89338279246 | 0.004834133333 | | | 65.799443083556 | 0.12503063535 11 | | |
| 464 | 198.02188354119 | 8.29000000e-005 | | | 65.799443083556 | 0.12449701030 56 | | |
| 465 | 198.63202567254 | 14.544893082395 | | | 65.889229235185 | 0.12449703561 006 | | |
| 466 | 199.135046374 6 | 8.29000000e-005 | | | 65.889229235185 | 0.12396532607 46 | | |
| 467 | 199.67512235684 | 0.010143613815 1 | | | 66.001061111751 | 0.12399143660 54 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ItGravPa... |
|---|---|---|---|---|---|---|---|---|
| 468 | 199.94069836516 | 0.008912557520 1 | | | 66.001061111751 | 0.12346038104709 | | |
| 469 | 200.02540409 86 | 0.007961866667 | | | 66.001687439403 | 0.12346416623 58 | | |
| 470 | 200.26497232073 | 0.009815590895 9 | | | 66.001687439403 | 0.12294101299 01 | | |
| 471 | 200.26755912073 | 15.510138422963 | | | 66.336598784175 | 0.12652232527 | | |
| 472 | 200.36117368877 | 0.007961866667 | | | 66.336598784175 | 0.12598847579 53 | | |
| 473 | 200.39201978959 | 8.29000000e-005 | | | 66.710623924449 | 0.12598882558 53 | | |
| 474 | 201.34985447654 | 0.007961866667 | | | 66.710623924449 | 0.12546946077 19 | | |
| 475 | 201.558206427 94 | 0.004834133333 | | | 66.838584229802 | 0.12546980905 13 | | |
| 476 | 203.16784071064 | 8.29000000e-005 | | | 66.838584229802 | 0.12493487255 16 | | |
| 477 | 203.72878103282 | 0.006253133333 | | | 66.899144445981 | 0.12493521951 35 | | |
| 478 | 204.20549095631 | 0.008846632471 | | | 66.899144445981 | 0.12441465609 88 | | |
| 479 | 204.27091764751 | 8.29000000e-005 | | | 66.904946524982 | 0.12441500015 155 | | |
| 480 | 204.28623975529 | 19.36964805141 | | | 66.904946524982 | 0.12389875659 59 | | |
| 481 | 204.42554184471 | 8.29000000e-005 | | | 67.216385384177 | 0.12389921529 1 | | |
| 482 | 204.71702091728 | 0.010463384446 | | | 67.216385384177 | 0.12338723575 96 | | |
| 483 | 204.80572908395 | 17.900586692788 | | | 67.287876643128 | 0.12338757832 16 | | |
| 484 | 204.87914705051 | 0.003202999637 | | | 67.287876643128 | 0.12287981050 95 | | |
| 485 | 205.20905865141 | 8.29000000e-005 | | | 68.067725460844 | 0.12563191100 49 | | |
| 486 | 205.62589170358 | 0.006253133333 | | | 68.067725460844 | 0.12611292778 31 | | |
| 487 | 205.85784582271 | 8.29000000e-005 | | | 68.212120292537 | 0.12611326575 172 | | |
| 488 | 206.46413316285 | 0.004834133333 | | | 68.212120292537 | 0.12559351948 55 | | |
| 489 | 206.80448904199 | 8.29000000e-005 | | | 68.542020396503 | 0.12559885795 39 | | |
| 490 | 207.46438897478 | 0.005740815398 | | | 68.542020396503 | 0.12508529359 1 | | |
| 491 | 207.52146929112 | 8.29000000e-005 | | | 68.814252117511 | 0.12259735440 48 | | |
| 492 | 208.44253791274 | 0.006253133333 | | | 68.814252117511 | 0.12206052301 04 | | |
| 493 | 209.44948142544 | 8.29000000e-005 | | | 69.239535917511 | 0.12581112920 81 | | |
| 494 | 210.10311380204 | 0.006253133333 | | | 69.239535917511 | 0.13526505035 71 | | |
| 495 | 210.49973544653 | 0.004834133333 | | | 69.980319950844 | 0.14302509286 43 | | |
| 496 | 210.70496378601 | 8.29000000e-005 | | | 69.980319950844 | 0.14245095356 76 | | |
| 497 | 211.24458464159 | 0.004834133333 | | | 70.179595917511 | 0.15376462340 11 | | |
| 498 | 211.47440756316 | 8.29000000e-005 | | | 70.179595917511 | 0.15314987356 76 | | |
| 499 | 212.54210954134 | 0.006253133333 | | | 70.422983917511 | 0.16456701078 94 | | |
| 500 | 212.63756254703 | 8.29000000e-005 | | | 70.422983917511 | 0.16391139932 81 | | |
| 501 | 213.29980950469 | 0.008575684165 | | | 71.120978272714 | 0.16392062423 5 | | |
| 502 | 213.69754595618 | 0.0047444 | | | 71.120978272714 | 0.16328010647 1 | | |
| 503 | 213.85113596038 | 8.29000000e-005 | | | 71.274272917512 | 0.16332478300 68 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ttGravPa... |
|---|---|---|---|---|---|---|---|---|
| 504 | 214.14107452617 | 0.009453001463 1 | | | 71.27427291751 2 | 0.1528792105839 | | |
| 505 | 214.37159579283 | 0.00861691270 8 | | | 71.39662195084 5 | 0.1527729840886 | | |
| 506 | 214.3847045151 | 8.29000000e-005 | | | 71.39662195084 5 | 0.1521321465885 | | |
| 507 | 215.05604520304 | 0.009581143622 6 | | | 72.19324965084 5 | 0.1521737889417 | | |
| 508 | 215.76844875135 | 8.29000000e-005 | | | 72.19324965084 5 | 0.1515378113056 | | |
| 509 | 217.05002910608 | 0.004834133333 3 | | | 73.06247525439 | 0.1515381364047 | | |
| 510 | 218.44899539719 | 0.0047444 | | | 73.06247525439 | 0.1509071280593 | | |
| 511 | 218.54864773547 | 8.29000000e-005 | | | 73.27853200359 1 | 0.1509074518875 | | |
| 512 | 218.75931489944 | 0.012326861073 3 | | | 73.27853200359 1 | 0.1502815528529 | | |
| 513 | 219.81237378043 | 8.29000000e-005 | | | 73.80946211751 2 | 0.1539566025806 | | |
| 514 | 221.31727762042 | 0.004834133333 3 | | | 73.80946211751 2 | 0.1533310791132 | | |
| 515 | 221.49111791046 | 0.006353133333 3 | | | 73.80953501751 2 | 0.1533314407077 | | |
| 516 | 221.71446839584 | 8.29000000e-005 | | | 73.80953501751 2 | 0.1527008701799 | | |
| 517 | 222.03331896503 | 0.004834133333 3 | | | 74.21961311751 3 | 0.1527220133816 | | |
| 518 | 222.043261366 | 8.29000000e-005 | | | 74.21961311751 3 | 0.1520995159484 | | |
| 519 | 223.25793204809 | 0.015852398540 1 | | | 74.32018157091 8 | 0.1520954783381 | | |
| 520 | 223.85934229482 | 0.009516718135 6 | | | 74.32018157091 8 | 0.1514754190262 | | |
| 521 | 224.05352052464 | 8.29000000e-005 | | | 74.48287511751 3 | 0.1515547092147 | | |
| 522 | 224.77751433369 | 0.004834133333 3 | | | 74.48287511751 3 | 0.1509380381872 | | |
| 523 | 225.35696986584 | 0.006353133333 3 | | | 75.22888687004 9 | 0.1509384045894 | | |
| 524 | 225.35696080017 | 8.29000000e-005 | | | 75.22888687004 9 | 0.1503264715021 | | |
| 525 | 225.53408753369 | 0.006385541224 6 | | | 75.45582291751 3 | 0.1643185322268 | | |
| 526 | 225.59237357696 | 8.29000000e-005 | | | 75.45582291751 3 | 0.1636961135852 | | |
| 527 | 226.44954119204 | 0.004834133333 3 | | | 75.46082790094 4 | 0.1637556601846 | | |
| 528 | 227.09803197399 | 0.009587649054 8 | | | 75.46082790094 4 | 0.1631376561807 | | |
| 529 | 228.37052813734 | 8.29000000e-005 | | | 75.68235893432 8 | 0.1631758907844 | | |
| 530 | 229.59233163747 | 0.004834133333 3 | | | 75.68235893432 8 | 0.1625624475865 | | |
| 531 | 230.24304890215 | 8.29000000e-005 | | | 75.92813763432 8 | 0.1626308051327 | | |
| 532 | 232.24276751496 | 0.010340338067 4 | | | 75.92813763432 8 | 0.1620215017925 | | |
| 533 | 232.31869039746 | 8.29000000e-005 | | | 76.17463146149 5 | 0.1620218122794 | | |
| 534 | 233.32385882073 | 0.0047444 | | | 76.17463146149 5 | 0.1614172532783 | | |
| 535 | 233.62518643703 | 8.29000000e-005 | | | 76.33525878418 | 0.1560513880051 | | |
| 536 | 233.79846502858 | 0.006353133333 3 | | | 76.33525878418 | 0.1544378145719 | | |
| 537 | 234.77658275269 | 8.29000000e-005 | | | 76.39656656768 1 | 0.1544893721614 | | |
| 538 | 234.89593095507 | 0.007961866666 7 | | | 76.39656656768 1 | 0.1538801522846 | | |
| 539 | 234.91875099624 | 8.29000000e-005 | | | 76.59463298418 | 0.1575084789593 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GravPat ... | 3 : Time | 3 : GravPat ... | 4 : Time | 4 : ttGravPa... |
|---|---|---|---|---|---|---|---|---|
| 540 | 236.19759967604 | 0.004834133333 3 | | | 76.59463298418 | 0.1568903564908 | | |
| 541 | 236.4291405973 | 8.29000000e-005 | | | 76.70526719221 2 | 0.1568906723949 | | |
| 542 | 238.48804870096 | 0.004834133333 3 | | | 76.70526719221 2 | 0.1562771937464 | | |
| 543 | 239.48606042238 | 0.007961866666 7 | | | 76.83108895279 9 | 0.1562774085258 | | |
| 544 | 240.54503571206 | 8.29000000e-005 | | | 76.83108895279 9 | 0.1556683337693 | | |
| 545 | 242.48076115933 | 0.004834133333 3 | | | 77.86573728262 1 | 0.1556686374323 | | |
| 546 | 242.48384401997 | 0.009420405874 1 | | | 77.86573728262 1 | 0.1550640073687 | | |
| 547 | 243.33251156321 | 8.29000000e-005 | | | 77.95087572281 5 | 0.1550643099234 | | |
| 548 | 244.35780797096 | 0.006353133333 3 | | | 77.95087572281 5 | 0.1544640763692 | | |
| 549 | 246.22653394689 | 8.29000000e-005 | | | 78.54424484023 4 | 0.1544643775237 | | |
| 550 | 246.99002574225 | 0.004834133333 3 | | | 78.54424484023 4 | 0.1538684920979 | | |
| 551 | 247.00425531364 | 8.29000000e-005 | | | 78.55805611270 6 | 0.1538687924602 | | |
| 552 | 247.62071980694 | 0.004834133333 3 | | | 78.55805611270 6 | 0.1532772083719 | | |
| 553 | 247.78982527082 | 0.006704657118 2 | | | 78.70449762198 3 | 0.1532775075499 | | |
| 554 | 248.32558558259 | 8.29000000e-005 | | | 78.70449762198 3 | 0.1526901784857 | | |
| 555 | 250.33339668885 | 0.0047444 | | | 79.24865521203 6 | 0.1526904766871 | | |
| 556 | 250.45593365123 | 8.29000000e-005 | | | 79.24865521203 6 | 0.1521073566699 | | |
| 557 | 251.03936138738 | 0.008820905494 4 | | | 79.54035011751 5 | 0.1521861798341 | | |
| 558 | 251.51200738652 | 0.004834133333 3 | | | 79.54035011751 5 | 0.1515069434775 | | |
| 559 | 252.52812434046 | 8.29000000e-005 | | | 79.68999452472 6 | 0.1515072395489 | | |
| 560 | 252.58265811652 | 0.004834133333 3 | | | 79.68999452472 6 | 0.1510321248174 | | |
| 561 | 252.60058257491 | 0.008326796418 5 | | | 79.71880055084 8 | 0.1510863672562 | | |
| 562 | 252.60677872494 | 8.29000000e-005 | | | 79.71880055084 8 | 0.1505151390036 | | |
| 563 | 252.76327168824 | 0.007961866666 7 | | | 79.72714698418 1 | 0.1719755530451 | | |
| 564 | 253.04526601776 | 8.29000000e-005 | | | 79.72714698418 1 | 0.1713678655785 | | |
| 565 | 255.65709900157 | 0.006353133333 3 | | | 80.59114658418 2 | 0.1714425812305 | | |
| 566 | 256.21101847521 | 8.29000000e-005 | | | 80.59114658418 2 | 0.1708399068487 | | |
| 567 | 256.66023304562 | 0.007961866666 7 | | | 80.80996258418 2 | 0.1798205212259 | | |
| 568 | 257.67144879593 | 8.29000000e-005 | | | 80.80996258418 2 | 0.1779937825683 | | |
| 569 | 257.74348789675 | 0.004834133333 4 | | | 81.21146848852 4 | 0.1779940734652 | | |
| 570 | 258.25181884219 | 8.29000000e-005 | | | 81.21146848852 4 | 0.1773717165649 | | |
| 571 | 260.44539751833 | 0.007224258833 5 | | | 81.47959365084 8 | 0.1813254570331 | | |
| 572 | 261.06195650096 | 0.006353133333 4 | | | 81.47959365084 8 | 0.1806926610125 | | |
| 573 | 261.22630525756 | 8.29000000e-005 | | | 81.79562698418 2 | 0.1846581492837 | | |
| 574 | 264.00768435638 | 0.031502738202 4 | | | 81.79562698418 2 | 0.1839179223765 | | |
| 575 | 264.16289916555 | 8.29000000e-005 | | | 82.24924429401 4 | 0.1839176102237 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 HGravPa... |
|---|---|---|---|---|---|---|---|---|
| 576 | 265.0344130071 8 | 0.0129790208535 | | | 82.2492442294014 | 0.1802812171087 | | |
| 577 | 266.4768376925 4 | 0.0048341333334 | | | 82.2581421503 9 | 0.1802815039599 | | |
| 578 | 266.0772831182 | 8.29000000e-005 | | | 82.2581421503 9 | 0.1825494987739 | | |
| 579 | 266.4640512214 | 0.0048341333334 | | | 82.5062724146 3 | 0.1825497846359 | | |
| 580 | 266.5349213944 | 8.29000000e-005 | | | 82.5062724146 3 | 0.1820221221468 | | |
| 581 | 267.3195787882 6 | 0.0154235324004 | | | 82.8642809941 35 | 0.1820224070255 | | |
| 582 | 267.9941221617 4 | 8.29000000e-005 | | | 82.8642809941 35 | 0.1810990425179 | | |
| 583 | 268.3854003137 0 | 0.0102525694566 | | | 83.1233372503 49 | 0.1895790081946 | | |
| 584 | 268.4710796791 8 | 8.29000000e-005 | | | 83.1233372503 49 | 0.1889322798309 | | |
| 585 | 268.6102494601 | 0.0178407290194 | | | 83.5400759175 16 | 0.1900496368504 | | |
| 586 | 269.7617521856 7 | 8.29000000e-005 | | | 83.5400759175 16 | 0.1920927379989 | | |
| 587 | 271.0900192774 | 0.0084402641286 | | | 84.0428555317 103 | 0.1923830199717 | | |
| 588 | 271.0994052744 1 | 0.0064482058152 | | | 84.0428555317 103 | 0.1917408402429 | | |
| 589 | 271.4862268078 | 8.29000000e-005 | | | 84.8905555585383 | 0.1917411212599 | | |
| 590 | 271.7200315464 1 | 0.0056351333334 | | | 84.8905555585383 | 0.1910933472016 | | |
| 591 | 271.7691218157 9 | 8.29000000e-005 | | | 85.3585088753383 | 0.1910936272691 | | |
| 592 | 272.5973101028 3 | 0.0079618666667 | | | 85.3585088753383 | 0.1904602143827 | | |
| 593 | 272.7209266222 | 8.29000000e-005 | | | 86.3101084703846 | 0.1904711605404 | | |
| 594 | 273.0041992077 6 | 0.0128146962667 | | | 86.3101084703846 | 0.1898324589940 | | |
| 595 | 273.5727292586 2 | 0.0096991743793 | | | 86.3546921175 17 | 0.2018929758205 | | |
| 596 | 274.0832084254 | 8.29000000e-005 | | | 86.3546921175 17 | 0.2012177464883 | | |
| 597 | 275.0240711060 4 | 0.0048341333334 | | | 86.6224037248 94 | 0.2012180237408 | | |
| 598 | 275.1008762833 | 8.29000000e-005 | | | 86.6224037248 94 | 0.2005472968998 | | |
| 599 | 275.3770956507 5 | 0.0079618666667 | | | 87.0627243558 15 | 0.2005475733014 | | |
| 600 | 275.4567815130 4 | 8.29000000e-005 | | | 87.0627243558 15 | 0.1998813023206 | | |
| 601 | 276.4091957074 | 0.0113595204931 | | | 88.4623464608 51 | 0.2084950187464 | | |
| 602 | 276.4655350447 | 8.29000000e-005 | | | 88.4623464608 51 | 0.2078046278888 | | |
| 603 | 276.9736190439 9 | 0.0079618666667 | | | 88.8225854608 51 | 0.2120796027261 | | |
| 604 | 277.1031425498 8 | 8.29000000e-005 | | | 88.8225854608 51 | 0.2113796700438 | | |
| 605 | 277.2993642300 1 | 0.0072492575654 | | | 88.8267321175 18 | 0.2198637712261 | | |
| 606 | 277.3316749071 1 | 8.29000000e-005 | | | 88.8267321175 18 | 0.2191405351366 | | |
| 607 | 281.0874213348 1 | 0.0056351333334 | | | 89.5668350175 18 | 0.2237468118003 | | |
| 608 | 281.7583782847 3 | 8.29000000e-005 | | | 89.5668350175 18 | 0.2230102156995 | | |
| 609 | 283.5335175584 6 | 0.0079618666667 | | | 89.8462828341 85 | 0.2230876542087 | | |
| 610 | 283.5522277530 1 | 0.0070991999998 | | | 89.8462828341 85 | 0.2223536095871 | | |
| 611 | 283.7139114352 7 | 0.0048341333334 | | | 90.0224600841 85 | 0.2311559569907 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern F1 Hq LAN

| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 HGravPa... |
|---|---|---|---|---|---|---|---|---|
| 612 | 284.4265910036 7 | 0.0056351333334 | | | 90.0224600841 85 | 0.2304030059072 | | |
| 613 | 286.0813103809 7 | 8.29000000e-005 | | | 90.3229109228 49 | 0.2309983162829 | | |
| 614 | 286.2042002226 | 0.0048341333334 | | | 90.3229109228 49 | 0.2385219490223 | | |
| 615 | 286.3084783194 | 8.29000000e-005 | | | 90.6610009841 85 | 0.2385389702582 | | |
| 616 | 286.3457625939 6 | 0.0048341333334 | | | 90.6610009841 85 | 0.2378650777978 | | |
| 617 | 286.4876808868 9 | 0.0056351333334 | | | 90.8719456408 52 | 0.2425903589857 | | |
| 618 | 287.5409955883 | 8.29000000e-005 | | | 90.8719456408 52 | 0.2418078185112 | | |
| 619 | 289.1400077302 7 | 0.0082509205297 | | | 91.0048676246 18 | 0.2418556318488 | | |
| 620 | 289.4196950488 3 | 0.0048341333334 | | | 91.0048676246 18 | 0.2410780108451 | | |
| 621 | 289.4235753821 7 | 0.0115193533887 | | | 91.1635918907 04 | 0.2410782774056 | | |
| 622 | 290.1287782003 7 | 8.29000000e-005 | | | 91.1635918907 04 | 0.2403055590619 | | |
| 623 | 290.2016328616 | 0.0048341333334 | | | 91.5589411138 73 | 0.2403058562241 | | |
| 624 | 290.6237933886 2 | 0.0087201545404 | | | 91.5589411138 73 | 0.2395381069846 | | |
| 625 | 290.6261717061 4 | 8.29000000e-005 | | | 91.5627372175 19 | 0.2395901210889 | | |
| 626 | 291.7986808606 9 | 0.0099522336799 | | | 91.5627372175 19 | 0.2388270952256 | | |
| 627 | 292.5510154195 8 | 8.29000000e-005 | | | 91.7261709048 54 | 0.2388275592383 | | |
| 628 | 292.9890582941 | 0.0079618666667 | | | 91.7261709048 54 | 0.2380691771466 | | |
| 629 | 293.1805678624 | 8.29000000e-005 | | | 92.0546092508 52 | 0.2517560156036 | | |
| 630 | 293.4719954138 6 | 0.0056351333334 | | | 92.0546092508 52 | 0.2509593192816 | | |
| 631 | 293.8425630005 1 | 0.0092672410129 | | | 92.9403454608 53 | 0.2504105539141 | | |
| 632 | 294.2859835292 | 0.0065746329721 | | | 92.9403454608 53 | 0.2495890695159 | | |
| 633 | 294.9259964469 | 0.0056351333334 | | | 93.2793940333 99 | 0.2595833310311 | | |
| 634 | 295.4308603382 | 8.29000000e-005 | | | 93.2793940333 99 | 0.2587730120801 | | |
| 635 | 297.2015942892 4 | 0.0056351333334 | | | 93.4847254608 53 | 0.2635427174979 | | |
| 636 | 298.0150397231 6 | 0.0079618666667 | | | 93.4847254608 53 | 0.2627185647785 | | |
| 637 | 298.1469825929 | 0.0084975598537 | | | 93.7944045841 85 | 0.2627353460704 | | |
| 638 | 298.9574259552 | 8.29000000e-005 | | | 93.7944045841 85 | 0.2619152949889 | | |
| 639 | 299.1771157896 | 0.0048341333334 | | | 93.8460682175 2 | 0.2619520009225 | | |
| 640 | 300.1576413190 6 | 8.29000000e-005 | | | 93.8460682175 2 | 0.2611359510754 | | |
| 641 | 302.2689987409 | 0.0048341333334 | | | 93.9312790117 3 | 0.2611352093308 | | |
| 642 | 302.3626046956 | 0.0047443992999 | | | 93.9312790117 3 | 0.2603252273142 | | |
| 643 | 302.8569429204 2 | 8.29000000e-005 | | | 94.0815705841 86 | 0.2651202371977 | | |
| 644 | 303.4311536897 8 | 0.0079618666667 | | | 94.0815705841 86 | 0.2643114940485 | | |
| 645 | 303.4744811855 4 | 8.29000000e-005 | | | 94.2826003175 2 | 0.2691466351035 | | |
| 646 | 305.6401498891 4 | 0.0089757201191 | | | 94.2826003175 2 | 0.2683149385889 | | |
| 647 | 305.8436987192 1 | 8.29000000e-005 | | | 94.2646454608 53 | 0.2779627308262 | | |

Extend

File Edit Library Model Text Define Run Window Help

[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 648 | 305.89629939742 | 0.0079618666667 | | | 94.364646460853 | 0.277107460885 | | |
| 649 | 306.42284928991 | 8.29000000e-005 | | | 94.927100886173 | 0.277131958936 | | |
| 650 | 306.89445207663 | 0.0079618666667 | | | 94.927100886173 | 0.276281860903 | | |
| 651 | 307.65127387094 | 8.29000000e-005 | | | 95.423246460854 | 0.281149197541 | | |
| 652 | 307.74431560784 | 0.0048341333334 | | | 95.423246460854 | 0.280289410623 | | |
| 653 | 308.08384066628 | 8.29000000e-005 | | | 95.747204660854 | 0.280289878028 | | |
| 654 | 310.88933096211 | 0.0055566479112 | | | 95.747204660854 | 0.279453357159 | | |
| 655 | 310.92346527482 | 8.29000000e-005 | | | 95.946746460854 | 0.280190661518 | | |
| 656 | 311.78695534422 | 0.0047443999999 | | | 95.946746460854 | 0.280311652847 | | |
| 657 | 311.90463399911 | 8.29000000e-005 | | | 95.948254497254 | 0.280311914623 | | |
| 658 | 312.11032606375 | 0.0048341333334 | | | 95.948254497254 | 0.287438242154 | | |
| 659 | 312.11143372187 | 8.29000000e-005 | | | 96.452113117521 | 0.287479019086 | | |
| 660 | 312.13173044395 | 0.0047443999999 | | | 96.452113117521 | 0.286610602362 | | |
| 661 | 312.26026739545 | 0.0048341333334 | | | 96.817139807141 | 0.286610752815 | | |
| 662 | 312.46804851246 | 0.0047443999999 | | | 96.817139807141 | 0.285747467415 | | |
| 663 | 312.47906082466 | 8.29000000e-005 | | | 97.559028387927 | 0.285747717114 | | |
| 664 | 312.76080347609 | 0.0048341333334 | | | 97.559028387927 | 0.284889515862 | | |
| 665 | 312.87825387386 | 0.0079618666667 | | | 97.820852595563 | 0.284889864811 | | |
| 666 | 313.15967315069 | 8.29000000e-005 | | | 97.820852595563 | 0.284038901143 | | |
| 667 | 313.59257968974 | 0.0063531333334 | | | 98.111841584188 | 0.284118218446 | | |
| 668 | 313.69526044414 | 0.0048341333334 | | | 98.111841584188 | 0.293270104261 | | |
| 669 | 313.99997949791 | 0.0079618666667 | | | 98.466396884517 | 0.283270351824 | | |
| 670 | 314.11808482898 | 0.0047443999999 | | | 98.466396884517 | 0.282427285201 | | |
| 671 | 314.41404787171 | 8.29000000e-005 | | | 98.583139832954 | 0.282427532027 | | |
| 672 | 315.03501685704 | 0.0047443999999 | | | 98.583139832954 | 0.281584468134 | | |
| 673 | 316.54263116138 | 8.29000000e-005 | | | 98.922025917556 | 0.281589714128 | | |
| 674 | 322.37532460223 | 0.0048341333334 | | | 98.922025917556 | 0.280755608465 | | |
| 675 | 323.14155451772 | 8.29000000e-005 | | | 99.090220054034 | 0.280755853731 | | |
| 676 | 324.45727811322 | 0.0174692588879 | | | 99.090220054034 | 0.279928652422 | | |
| 677 | 324.61306471758 | 8.29000000e-005 | | | 99.108305532996 | 0.279928906865 | | |
| 678 | 325.18354633219 | 0.0079618666667 | | | 99.108305532996 | 0.279105586606 | | |
| 679 | 325.26514833595 | 8.29000000e-005 | | | 99.181894392339 | 0.279105820474 | | |
| 680 | 325.41942872391 | 0.0079618666667 | | | 99.181894392339 | 0.278287383026 | | |
| 681 | 325.55747803132 | 0.0063531333334 | | | 100.209730657 | 0.278287581411 | | |
| 682 | 325.67391560097 | 8.29000000e-005 | | | 100.209730657 | 0.277473875032 | | |
| 683 | 327.39053001221 | 0.0047443999999 | | | 100.343730024840 | 0.277474117430 | | |

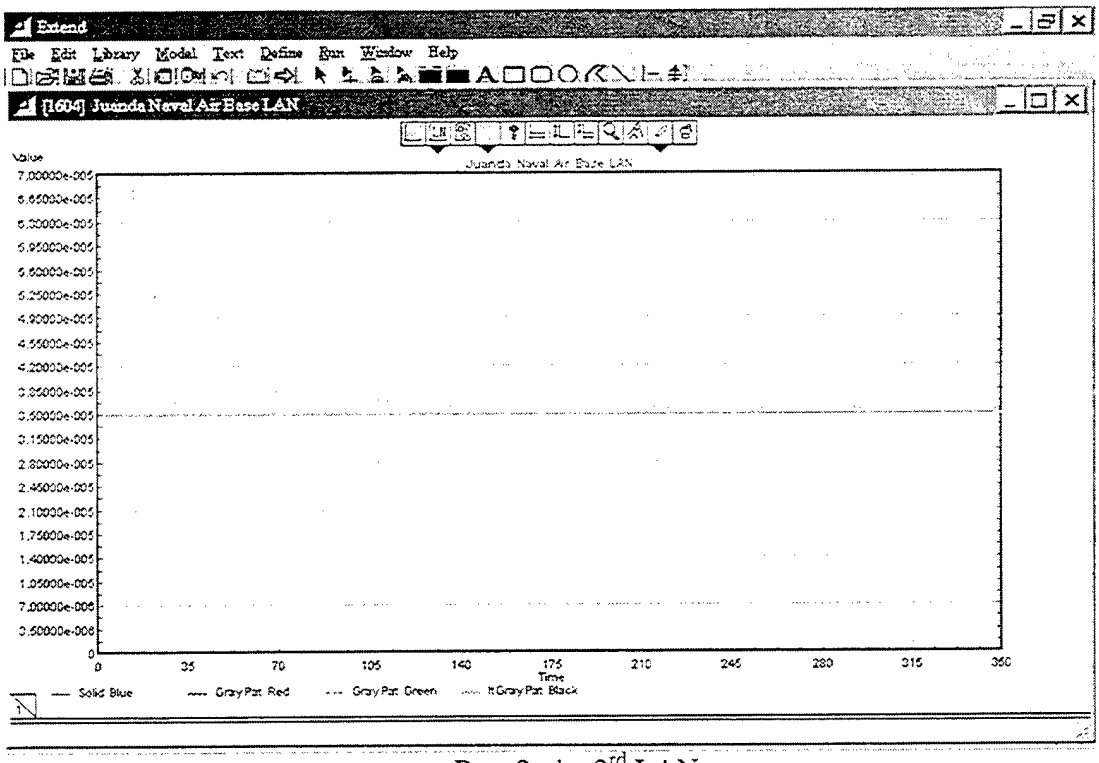
Extend

File Edit Library Model Text Define Run Window Help

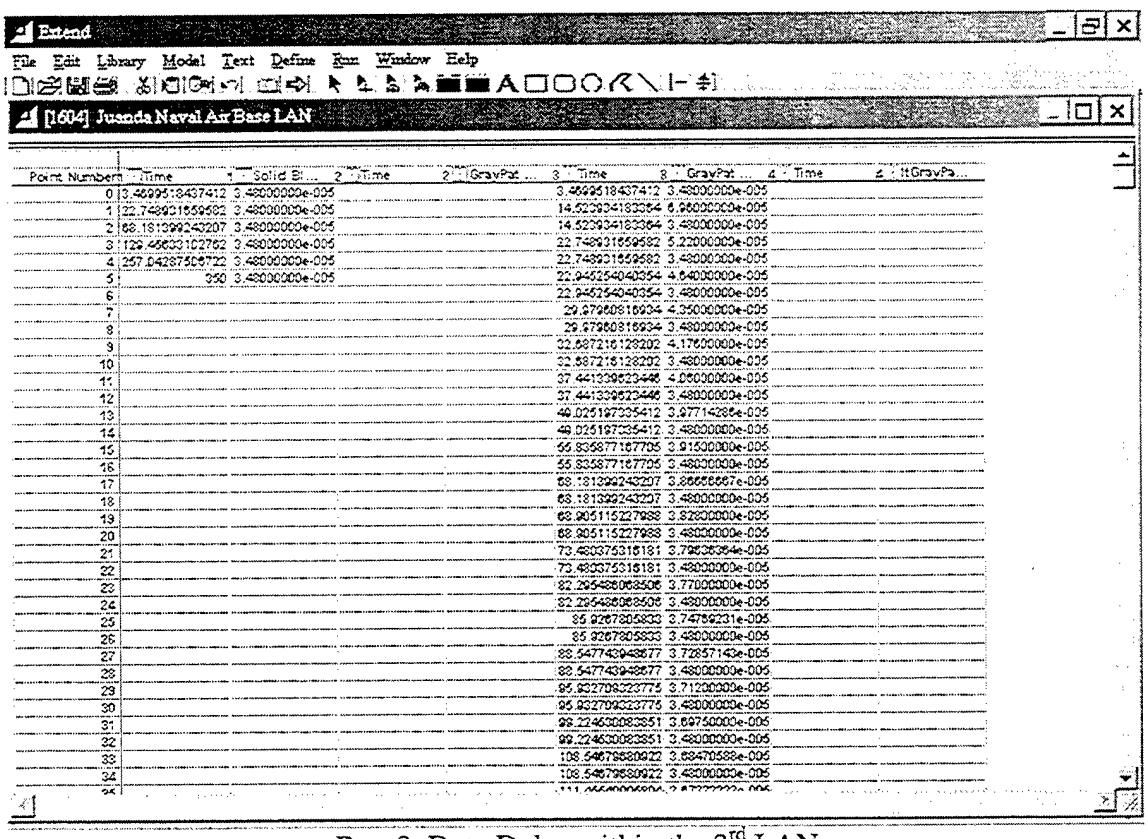
[1271] The Indonesian Eastern Fl Hq LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 685 | 329.70709803022 | 0.0063531333334 | | | 100.64656541752 | 0.276702635893 | | |
| 686 | 330.32747805368 | 8.29000000e-005 | | | 100.64656541752 | 0.275893154227 | | |
| 687 | 330.94351830657 | 0.0063531333334 | | | 100.73993736011 | 0.275988564111 | | |
| 688 | 331.48153517925 | 0.0079618666667 | | | 100.73993736011 | 0.275088504505 | | |
| 689 | 332.3343691874 | 8.29000000e-005 | | | 100.77609211752 | 0.278886239927 | | |
| 690 | 332.67722418848 | 0.0063531333334 | | | 100.77609211752 | 0.278074610587 | | |
| 691 | 333.40548205909 | 0.0079618666667 | | | 101.09987058419 | 0.281892324109 | | |
| 692 | 333.78295811799 | 8.29000000e-005 | | | 101.09987058419 | 0.281079952657 | | |
| 693 | 334.15769850778 | 0.0063531333334 | | | 101.31562710358 | 0.281080191510 | | |
| 694 | 334.76680821597 | 0.0073380572876 | | | 101.31562710358 | 0.280272489810 | | |
| 695 | 335.48344138648 | 8.29000000e-005 | | | 101.69728858419 | 0.280004541237 | | |
| 696 | 337.460376792 | 0.0123483336625 | | | 101.69728858419 | 0.279501376362 | | |
| 697 | 337.8156791288 | 8.29000000e-005 | | | 102.11479867693 | 0.279501613982 | | |
| 698 | 338.26855976872 | 0.0090700803059 | | | 102.11479867693 | 0.278703037858 | | |
| 699 | 338.32969090566 | 8.29000000e-005 | | | 102.51442303743 | 0.278703274715 | | |
| 700 | 339.50587759765 | 0.0063531333334 | | | 102.51442303743 | 0.277909246291 | | |
| 701 | 340.0968381798 | 8.29000000e-005 | | | 103.24828202132 | 0.277909494474 | | |
| 702 | 341.04677168972 | 0.0063531333334 | | | 103.24828202132 | 0.277119968893 | | |
| 703 | 341.46278238401 | 8.29000000e-005 | | | 104.11891465364 | 0.277120044047 | | |
| 704 | 341.52426480274 | 0.0079618666667 | | | 104.11891465364 | 0.276335181332 | | |
| 705 | 341.89815467386 | 0.0084641503277 | | | 104.33851437828 | 0.276335361769 | | |
| 706 | 342.87226863985 | 8.29000000e-005 | | | 104.33851437828 | 0.275554787713 | | |
| 707 | 343.02780069342 | 0.0063531333334 | | | 104.39599186539 | 0.275555021894 | | |
| 708 | 344.48193881954 | 8.29000000e-005 | | | 104.39599186539 | 0.274778105647 | | |
| 709 | 345.54863271998 | 0.0099108114697 | | | 105.03930073483 | 0.274815972923 | | |
| 710 | 346.12614694604 | 8.29000000e-005 | | | 105.03930073483 | 0.274044017942 | | |
| 711 | 346.2433248246 | 0.0104801355651 | | | 105.20247318059 | 0.274044250874 | | |
| 712 | 346.78935505059 | 8.29000000e-005 | | | 105.20247318059 | 0.273278619527 | | |
| 713 | 347.19342513246 | 0.0063538291436 | | | 105.23335732468 | 0.273278852656 | | |
| 714 | 348.23343149159 | 8.29000000e-005 | | | 105.23335732468 | 0.272513508904 | | |
| 715 | 348.35857123732 | 0.0069180619731 | | | 105.27282575086 | 0.272532977189 | | |
| 716 | 348.52115923756 | 8.29000000e-005 | | | 105.27282575086 | 0.271773832358 | | |
| 717 | 348.58087663 | 0.0069806293873 | | | 105.77102705234 | 0.271774063255 | | |
| 718 | 349.76512397931 | 8.29000000e-005 | | | 105.77102705234 | 0.271019135015 | | |
| 719 | 350 | 8.29000000e-005 | | | 106.649188699439 | 0.271019365793 | | |
| 720 | | | | | 106.649188699439 | 0.270268619414 | | |

Run 3, Data Delay within the 2nd LAN

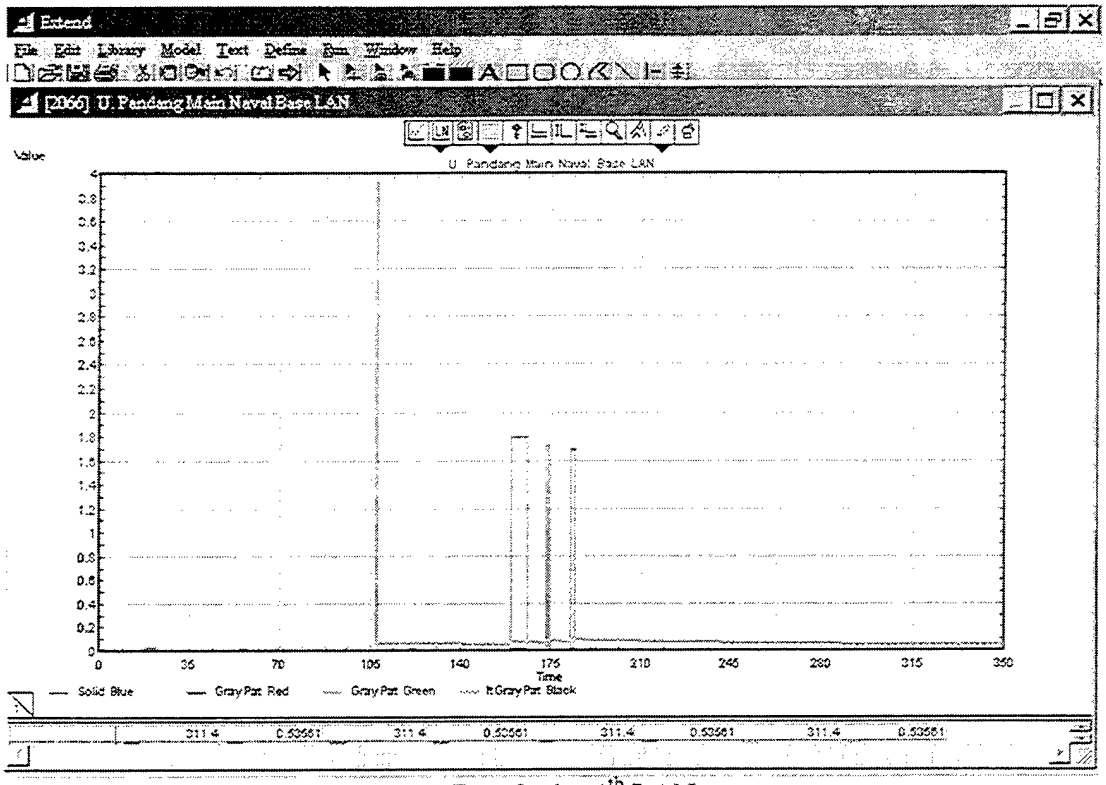



Run 3, the 3rd LAN

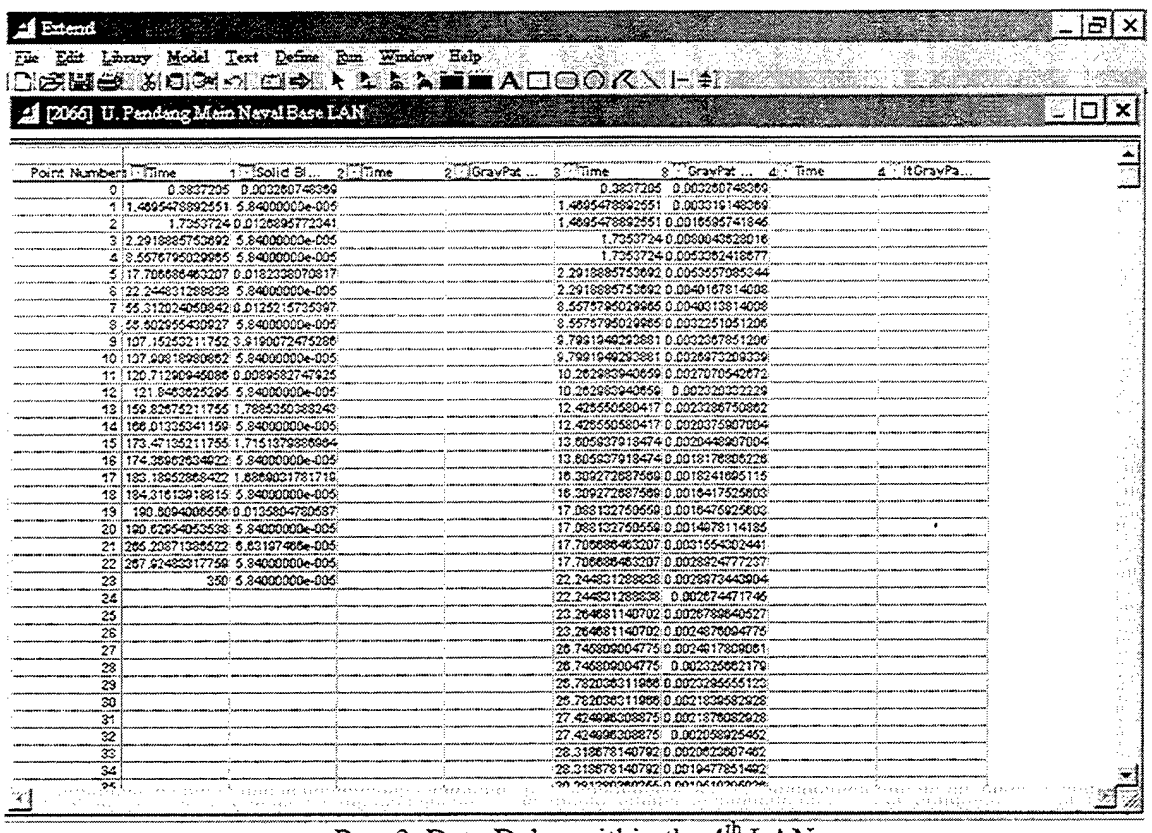



| Point Number | 1 : Time | 1 : Solid Bl... | 2 : Time | 2 : GrayPat ... | 3 : Time | 3 : GrayPat ... | 4 : Time | 4 : ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 3.469951843741 2 | 3.48000000e-005 | | | 3.469951843741 2 | 3.48000000e-005 | | |
| 1 | 22.74892155958 2 | 3.48000000e-005 | | | 14.52093418336 4 | 6.96000000e-005 | | |
| 2 | 68.18139924320 7 | 3.48000000e-005 | | | 14.52093418336 4 | 3.48000000e-005 | | |
| 3 | 129.4560310276 2 | 3.48000000e-005 | | | 22.74892155958 2 | 5.22000000e-005 | | |
| 4 | 257.0428750672 2 | 3.48000000e-005 | | | 22.74892155958 2 | 3.48000000e-005 | | |
| 5 | 350 | 3.48000000e-005 | | | 22.94525404035 4 | 4.64000000e-005 | | |
| 6 | | | | | 22.94525404035 4 | 3.48000000e-005 | | |
| 7 | | | | | 29.47960816934 | 4.35000000e-005 | | |
| 8 | | | | | 29.47960816934 | 3.48000000e-005 | | |
| 9 | | | | | 32.58721612820 2 | 4.17600000e-005 | | |
| 10 | | | | | 32.58721612820 2 | 3.48000000e-005 | | |
| 11 | | | | | 37.44133952344 6 | 4.06000000e-005 | | |
| 12 | | | | | 37.44133952344 6 | 3.48000000e-005 | | |
| 13 | | | | | 40.02519723541 2 | 3.97714286e-005 | | |
| 14 | | | | | 40.02519723541 2 | 3.48000000e-005 | | |
| 15 | | | | | 55.83587716770 5 | 3.91500000e-005 | | |
| 16 | | | | | 55.83587716770 5 | 3.48000000e-005 | | |
| 17 | | | | | 68.18139924320 7 | 3.86666667e-005 | | |
| 18 | | | | | 68.18139924320 7 | 3.48000000e-005 | | |
| 19 | | | | | 68.90511522798 8 | 3.82800000e-005 | | |
| 20 | | | | | 68.90511522798 8 | 3.48000000e-005 | | |
| 21 | | | | | 73.48037531618 1 | 3.79636364e-005 | | |
| 22 | | | | | 73.48037531618 1 | 3.48000000e-005 | | |
| 23 | | | | | 82.29548806850 6 | 3.77000000e-005 | | |
| 24 | | | | | 82.29548806850 6 | 3.48000000e-005 | | |
| 25 | | | | | 85.9267805833 | 3.74769231e-005 | | |
| 26 | | | | | 85.9267805833 | 3.48000000e-005 | | |
| 27 | | | | | 88.54774394867 7 | 3.72857143e-005 | | |
| 28 | | | | | 88.54774394867 7 | 3.48000000e-005 | | |
| 29 | | | | | 95.93270923775 | 3.71200000e-005 | | |
| 30 | | | | | 95.93270923775 | 3.48000000e-005 | | |
| 31 | | | | | 99.22463008385 1 | 3.69750000e-005 | | |
| 32 | | | | | 99.22463008385 1 | 3.48000000e-005 | | |
| 33 | | | | | 108.5467958092 2 | 3.68470588e-005 | | |
| 34 | | | | | 108.5467958092 2 | 3.48000000e-005 | | |

Run 3, Data Delay within the 3rd LAN

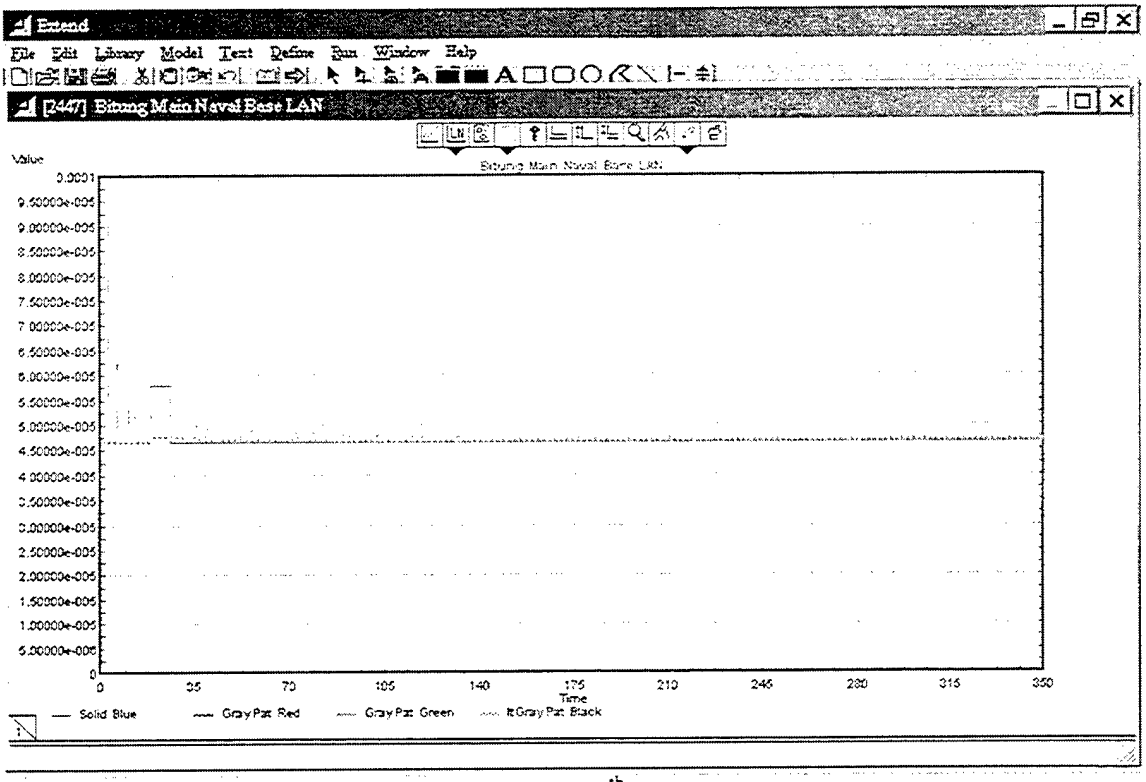



Run 3, the 4th LAN

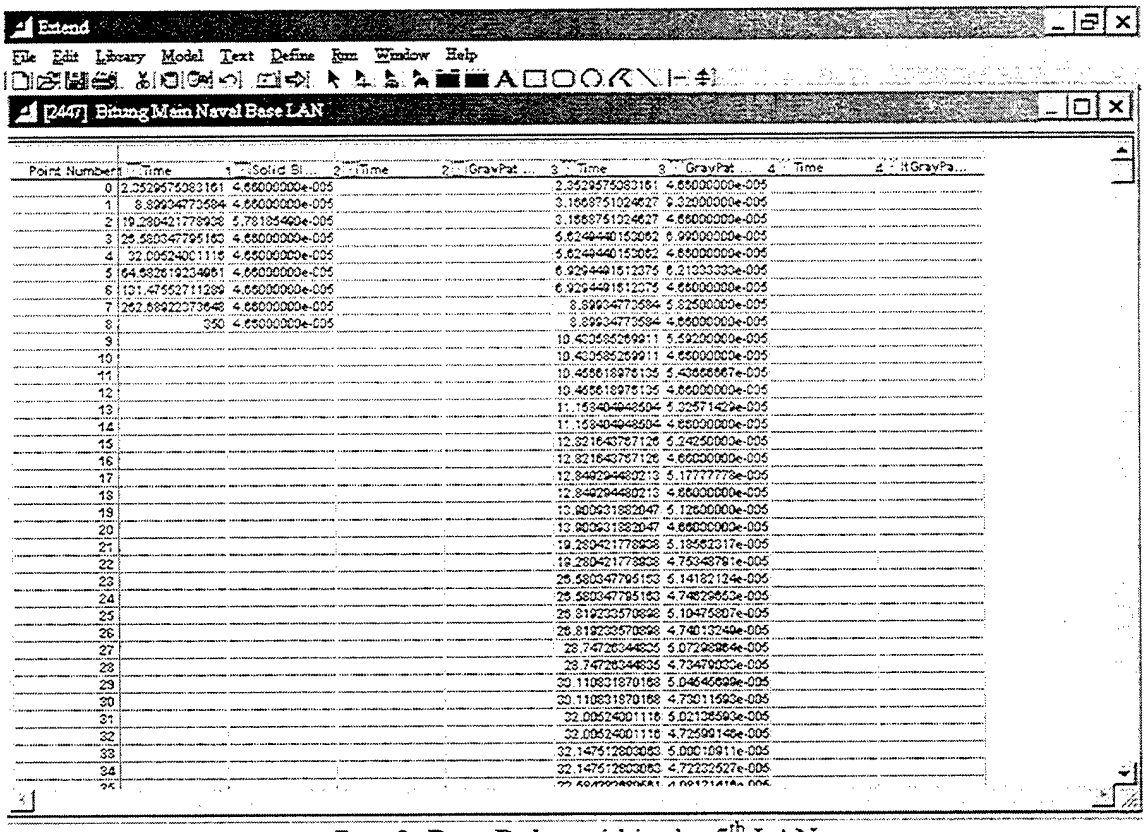



| Point Number | Time 1 | Solid Bl... 2 | Time 2 | GrayPat ... 3 | Time 3 | GrayPat ... 4 | Time 4 | ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.3837205 | 0.00326074839 | | | 0.3837205 | 0.00326074839 | | |
| 1 | 1.46954788992551 | 5.84000000e-005 | | | 1.46954788992551 | 0.0003191483869 | | |
| 2 | 1.7053724 | 0.012689772341 | | | 1.46954788992551 | 0.0016595741846 | | |
| 3 | 2.2918885753692 | 5.84000000e-005 | | | 1.7053724 | 0.0050043528016 | | |
| 4 | 8.5576795029965 | 5.84000000e-005 | | | 1.7053724 | 0.0053362418677 | | |
| 5 | 17.706686463207 | 0.018233807081 7 | | | 2.2918885753692 | 0.0053557085344 | | |
| 6 | 22.244831288838 | 5.84000000e-005 | | | 2.2918885753692 | 0.0040167814008 | | |
| 7 | 65.312024059842 | 0.01252157355397 | | | 8.5576795029965 | 0.0040013814008 | | |
| 8 | 65.502955430927 | 5.84000000e-005 | | | 8.5576795029965 | 0.0032251951206 | | |
| 9 | 107.15253211752 | 3.9190072475286 | | | 9.7991949293881 | 0.0032367851206 | | |
| 10 | 107.90818980862 | 5.84000000e-005 | | | 9.7991949293881 | 0.0026973209339 | | |
| 11 | 120.71290945086 | 0.0089582747925 | | | 10.262983940659 | 0.0027070542672 | | |
| 12 | 121.9463625295 | 5.84000000e-005 | | | 10.262983940659 | 0.0020203522229 | | |
| 13 | 159.8267521175 5 | 1.7885350388243 | | | 12.425550580417 | 0.0020386750862 | | |
| 14 | 166.01335341159 | 5.84000000e-005 | | | 12.425550580417 | 0.0020375907004 | | |
| 15 | 173.47135211755 | 1.7151379386964 | | | 13.605937918474 | 0.0020448907004 | | |
| 16 | 174.35962534422 | 5.84000000e-005 | | | 13.605937918474 | 0.0018176805228 | | |
| 17 | 183.18952868422 | 1.8869031781719 | | | 16.309272687569 | 0.0018241695115 | | |
| 18 | 184.31613918815 | 5.84000000e-005 | | | 16.309272687569 | 0.0016417525603 | | |
| 19 | 190.80940065 56 | 0.013580478058 7 | | | 17.083132750559 | 0.0016475925603 | | |
| 20 | 190.62954053538 | 5.84000000e-005 | | | 17.083132750559 | 0.0014878114185 | | |
| 21 | 266.20871385622 | 6.63197466e-005 | | | 17.706686463207 | 0.0031554302441 | | |
| 22 | 267.92483317759 | 5.84000000e-005 | | | 17.706686463207 | 0.0028924777237 | | |
| 23 | 350 | 5.84000000e-005 | | | 22.244831288838 | 0.0028973443904 | | |
| 24 | | | | | 22.244831288838 | 0.0026744717 46 | | |
| 25 | | | | | 23.264681140702 | 0.0026789840527 | | |
| 26 | | | | | 23.264681140702 | 0.0024876094775 | | |
| 27 | | | | | 25.746809004775 | 0.0024917809061 | | |
| 28 | | | | | 25.746809004775 | 0.0023256662179 | | |
| 29 | | | | | 25.782036311966 | 0.0023295555123 | | |
| 30 | | | | | 25.782036311966 | 0.0021839582928 | | |
| 31 | | | | | 27.424996208875 | 0.0021876082928 | | |
| 32 | | | | | 27.424996208875 | 0.0020589254 52 | | |
| 33 | | | | | 28.318678140792 | 0.0020623607462 | | |
| 34 | | | | | 28.318678140792 | 0.0019477851462 | | |

Run 3, Data Delay within the 4th LAN

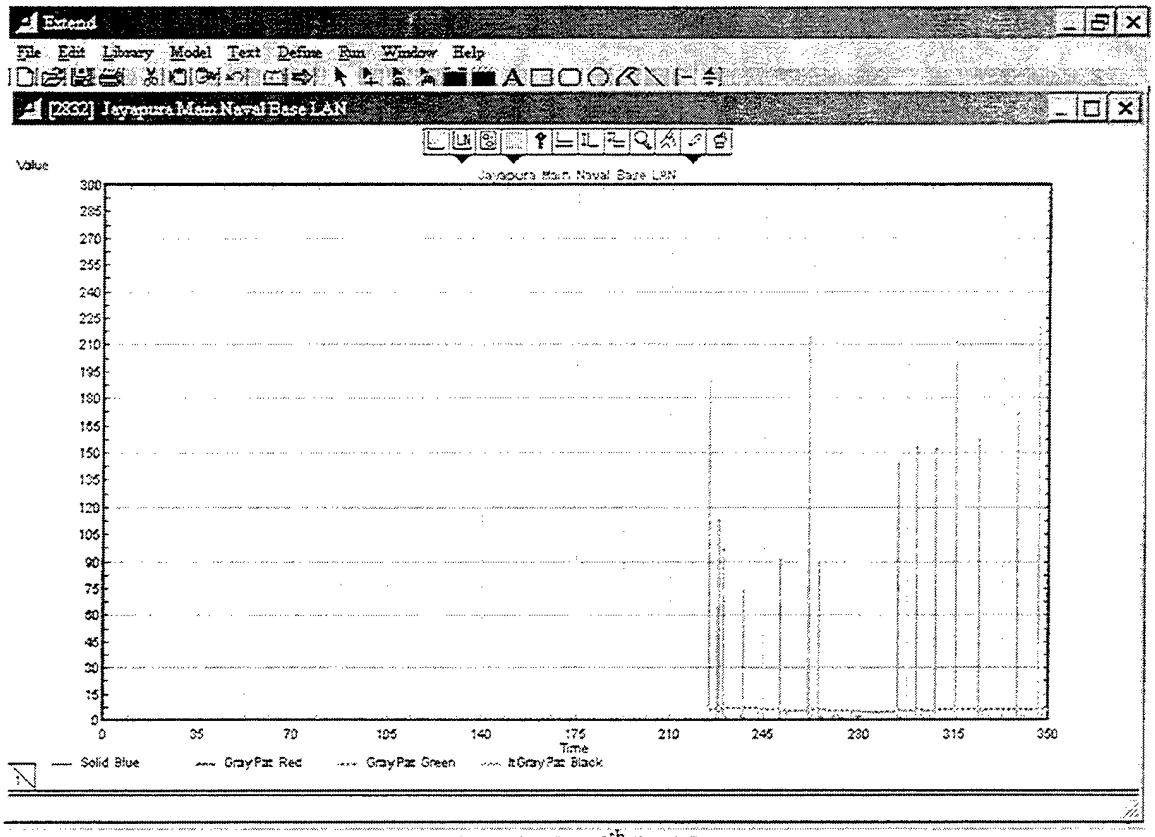



Run 3, the 5th LAN

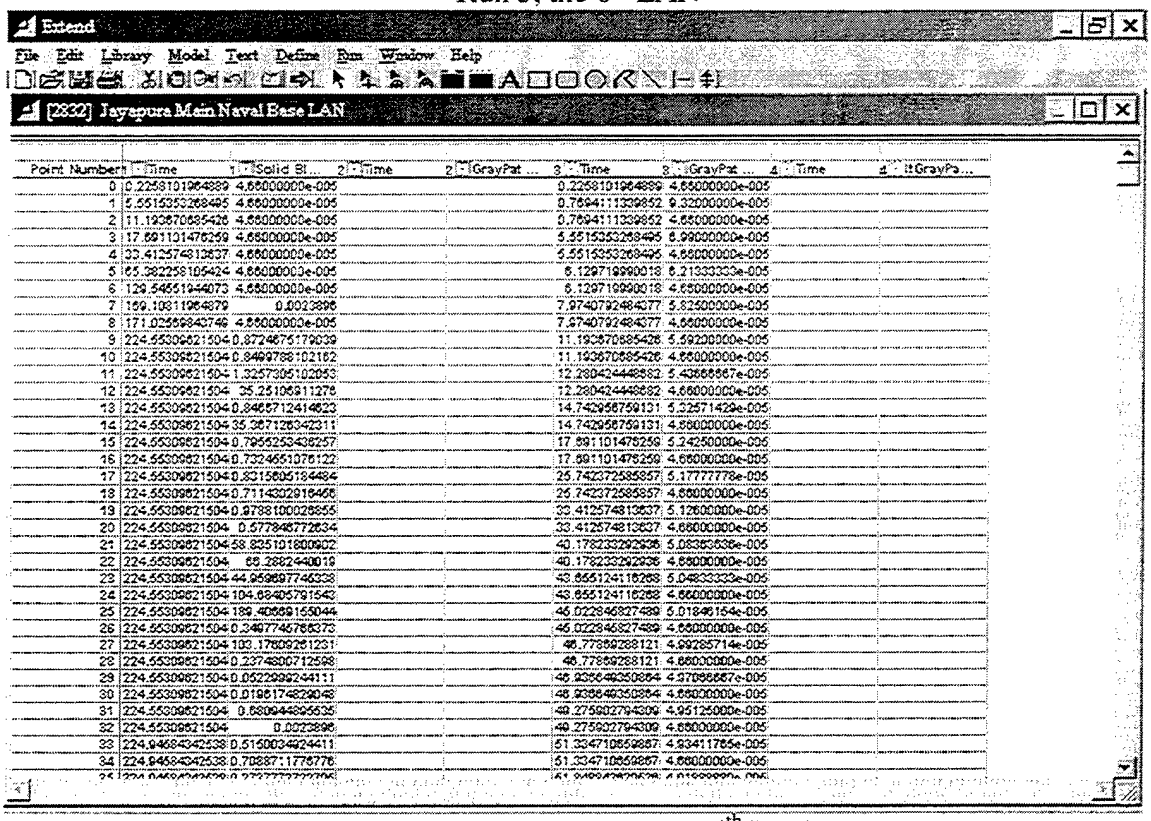



| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ltGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 2.352957503161 | 4.65000000e-005 | | | 2.352957503161 | 4.65000000e-005 | | |
| 1 | 8.899047773584 | 4.65000000e-005 | | | 3.1668751024627 | 9.32000000e-005 | | |
| 2 | 19.280421778938 | 5.78185460e-005 | | | 3.1668751024627 | 4.65000000e-005 | | |
| 3 | 26.580347795163 | 4.65000000e-005 | | | 5.6249440153062 | 6.99000000e-005 | | |
| 4 | 32.00524001115 | 4.65000000e-005 | | | 5.6249440153062 | 4.65000000e-005 | | |
| 5 | 64.582619234951 | 4.65000000e-005 | | | 6.9294491512375 | 5.21303030e-005 | | |
| 6 | 101.47552711289 | 4.65000000e-005 | | | 6.9294491512375 | 4.65000000e-005 | | |
| 7 | 252.58922373648 | 4.65000000e-005 | | | 8.899047773584 | 5.82500000e-005 | | |
| 8 | 350 | 4.65000000e-005 | | | 8.899047773584 | 4.65000000e-005 | | |
| 9 | | | | | 10.430685259911 | 5.59200000e-005 | | |
| 10 | | | | | 10.430685259911 | 4.65000000e-005 | | |
| 11 | | | | | 10.455618975135 | 5.43655667e-005 | | |
| 12 | | | | | 10.455618975135 | 4.65000000e-005 | | |
| 13 | | | | | 11.153404948504 | 5.32571429e-005 | | |
| 14 | | | | | 11.153404948504 | 4.65000000e-005 | | |
| 15 | | | | | 12.921643787126 | 5.24250000e-005 | | |
| 16 | | | | | 12.921643787126 | 4.65000000e-005 | | |
| 17 | | | | | 12.849294480213 | 5.17777778e-005 | | |
| 18 | | | | | 12.849294480213 | 4.65000000e-005 | | |
| 19 | | | | | 13.900931882047 | 5.12500000e-005 | | |
| 20 | | | | | 13.900931882047 | 4.65000000e-005 | | |
| 21 | | | | | 19.280421778938 | 5.18562317e-005 | | |
| 22 | | | | | 19.280421778938 | 4.75348791e-005 | | |
| 23 | | | | | 26.580347795163 | 5.14182124e-005 | | |
| 24 | | | | | 26.580347795163 | 4.74829653e-005 | | |
| 25 | | | | | 26.819233570898 | 5.10475807e-005 | | |
| 26 | | | | | 26.819233570898 | 4.74013249e-005 | | |
| 27 | | | | | 28.747268448635 | 5.07298864e-005 | | |
| 28 | | | | | 28.747268448635 | 4.73479000e-005 | | |
| 29 | | | | | 30.110831870168 | 5.04646689e-005 | | |
| 30 | | | | | 30.110831870168 | 4.73011593e-005 | | |
| 31 | | | | | 32.00524001115 | 5.02136593e-005 | | |
| 32 | | | | | 32.00524001115 | 4.72599146e-005 | | |
| 33 | | | | | 32.147512803053 | 5.00010911e-005 | | |
| 34 | | | | | 32.147512803053 | 4.72232527e-005 | | |

Run 3, Data Delay within the 5th LAN




Run 3, the 6th LAN




| Point Number | Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 0 | 0.2258101964889 | 4.66000000e-005 | | | 0.2258101964889 | 4.66000000e-005 | | |
| 1 | 5.5515353268495 | 4.66000000e-005 | | | 0.7694111339852 | 9.32000000e-005 | | |
| 2 | 11.190670685426 | 4.66000000e-005 | | | 0.7694111339852 | 4.66000000e-005 | | |
| 3 | 17.691101476259 | 4.66000000e-005 | | | 5.5515353268495 | 6.99000000e-005 | | |
| 4 | 33.412574813637 | 4.66000000e-005 | | | 5.5515353268495 | 4.66000000e-005 | | |
| 5 | 65.382258105424 | 4.66000000e-005 | | | 6.129719990018 | 6.21333333e-005 | | |
| 6 | 129.5465194407 3 | 4.66000000e-005 | | | 6.129719990018 | 4.66000000e-005 | | |
| 7 | 159.10811964879 | 0.0023896 | | | 7.97407924843 77 | 5.82500000e-005 | | |
| 8 | 171.02569843749 | 4.66000000e-005 | | | 7.97407924843 77 | 4.66000000e-005 | | |
| 9 | 224.55309621504 | 0.87246751779039 | | | 11.190670685426 | 5.59200000e-005 | | |
| 10 | 224.55309621504 | 0.84997881021 62 | | | 11.190670685426 | 4.66000000e-005 | | |
| 11 | 224.55309621504 | 1.3257305102053 | | | 12.280424448862 | 5.40666667e-005 | | |
| 12 | 224.55309621504 | 35.25106911276 | | | 12.280424448862 | 4.66000000e-005 | | |
| 13 | 224.55309621504 | 0.8465712414623 | | | 14.742956759131 | 5.32571429e-005 | | |
| 14 | 224.55309621504 | 35.367126342311 | | | 14.742956759131 | 4.66000000e-005 | | |
| 15 | 224.55309621504 | 0.7955253436257 | | | 17.691101476259 | 5.24250000e-005 | | |
| 16 | 224.55309621504 | 0.7324651076122 | | | 17.691101476259 | 4.66000000e-005 | | |
| 17 | 224.55309621504 | 0.8315605184484 | | | 25.742372585857 | 5.17777778e-005 | | |
| 18 | 224.55309621504 | 0.7114302916466 | | | 25.742372585857 | 4.66000000e-005 | | |
| 19 | 224.55309621504 | 0.9788100026855 | | | 33.412574813637 | 5.12600000e-005 | | |
| 20 | 224.55309621504 | 0.5778467772634 | | | 33.412574813637 | 4.66000000e-005 | | |
| 21 | 224.55309621504 | 58.825101809902 | | | 40.178233292936 | 5.08355636e-005 | | |
| 22 | 224.55309621504 | 65.2882440019 | | | 40.178233292936 | 4.66000000e-005 | | |
| 23 | 224.55309621504 | 44.959697746338 | | | 43.655124116268 | 5.04833333e-005 | | |
| 24 | 224.55309621504 | 104.68405791542 | | | 43.655124116268 | 4.66000000e-005 | | |
| 25 | 224.55309621504 | 189.40669155044 | | | 46.022846827489 | 5.01846154e-005 | | |
| 26 | 224.55309621504 | 0.3497746766373 | | | 46.022846827489 | 4.66000000e-005 | | |
| 27 | 224.55309621504 | 100.17809261231 | | | 46.778592881 21 | 4.99285714e-005 | | |
| 28 | 224.55309621504 | 0.2374800712598 | | | 46.778592881 21 | 4.66000000e-005 | | |
| 29 | 224.55309621504 | 0.0522999244111 | | | 48.935649350864 | 4.97066667e-005 | | |
| 30 | 224.55309621504 | 0.0195174829048 | | | 48.935649350864 | 4.66000000e-005 | | |
| 31 | 224.55309621504 | 0.6809448955635 | | | 49.275902794309 | 4.95125000e-005 | | |
| 32 | 224.55309621504 | 0.0023896 | | | 49.275902794309 | 4.66000000e-005 | | |
| 33 | 224.94684042538 | 0.5150034924411 | | | 51.334710659867 | 4.93411765e-005 | | |
| 34 | 224.94684042538 | 0.7088871776776 | | | 51.334710659867 | 4.66000000e-005 | | |
| 35 | [illegible] | [illegible] | | | [illegible] | [illegible] | | |

Run 3, Data Delay within the 6th LAN

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura Main Naval Base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ltGravPa... |
|---|---|---|---|---|---|---|---|---|
| 36 | 224.9468042528 | 68.01280358696 | | | 51.94884202526 | 4.65000000e-005 | | |
| 37 | 224.9468042528 | 0.370368375104 | | | 52.15442461835 | 4.90526316e-005 | | |
| 38 | 224.9468042528 | 0.2262491937841 | | | 52.15442461835 | 4.65000000e-005 | | |
| 39 | 224.9468042528 | 0.2808295605621 | | | 55.43196598465 2 | 4.89300000e-005 | | |
| 40 | 224.9468042528 | 0.2658307008437 | | | 55.43196598465 2 | 4.65000000e-005 | | |
| 41 | 224.9468042528 | 0.2803850190532 | | | 56.98212094583 2 | 4.83190476e-005 | | |
| 42 | 224.9468042528 | 0.1264756028722 | | | 56.98212094583 2 | 4.65000000e-005 | | |
| 43 | 224.9468042528 | 0.0965704760756 | | | 57.17068583948 | 4.87181818e-005 | | |
| 44 | 224.9468042528 | 0.0860072869442 | | | 57.17068583948 | 4.65000000e-005 | | |
| 45 | 224.9468042528 | 0.0323644060075 | | | 57.26091762460 8 | 4.85260870e-005 | | |
| 46 | 224.9468042528 | 4.65000000e-005 | | | 57.26091762460 8 | 4.65000000e-005 | | |
| 47 | 227.6605298516 | 2.264744551075 4 | | | 57.87957658590 4 | 4.85416667e-005 | | |
| 48 | 227.6605298516 | 2.204446510706 31 | | | 57.87957658590 4 | 4.65000000e-005 | | |
| 49 | 227.6605298516 | 2.137165314980 6 | | | 62.66415195720 4 | 4.94640000e-005 | | |
| 50 | 227.6605298516 | 38.29218957622 8 | | | 62.66415195720 4 | 4.65000000e-005 | | |
| 51 | 227.6605298516 | 63.60099677462 6 | | | 65.38225810542 4 | 4.83923077e-005 | | |
| 52 | 227.6605298516 | 2.053233675384 7 | | | 65.38225810542 4 | 4.65000000e-005 | | |
| 53 | 227.6605298516 | 2.023233892634 | | | 66.42839847089 6 | 4.83259259e-005 | | |
| 54 | 227.6605298516 | 2.023449614023 | | | 66.42839847089 6 | 4.65000000e-005 | | |
| 55 | 227.6605298516 | 1.959945706885 1 | | | 70.30893622943 | 4.82642857e-005 | | |
| 56 | 227.6605298516 | 1.77658702022 | | | 70.30893622943 | 4.65000000e-005 | | |
| 57 | 227.6605298516 | 1.533152771718 4 | | | 71.95242346351 8 | 4.82069966e-005 | | |
| 58 | 227.6605298516 | 1.414867056802 1 | | | 71.95242346351 8 | 4.65000000e-005 | | |
| 59 | 227.6605298516 | 1.38465885753 | | | 75.54448231320 9 | 4.81503333e-005 | | |
| 60 | 227.6605298516 | 1.304698129904 6 | | | 75.54448231320 9 | 4.65000000e-005 | | |
| 61 | 227.6605298516 | 1.300209417037 | | | 78.99908505725 | 4.81032258e-005 | | |
| 62 | 227.6605298516 | 1.277746444058 | | | 78.99908505725 | 4.65000000e-005 | | |
| 63 | 227.6605298516 | 1.608388354205 2 | | | 83.63295471787 5 | 4.80462500e-005 | | |
| 64 | 227.6605298516 | 1.247468245573 | | | 83.63295471787 5 | 4.65000000e-005 | | |
| 65 | 227.6605298516 | 1.390811111441 | | | 86.46781494408 4 | 4.80121212e-005 | | |
| 66 | 227.6605298516 | 1.192462575797 7 | | | 86.46781494408 4 | 4.65000000e-005 | | |
| 67 | 227.6605298516 | 1.278808727385 7 | | | 88.02199990225 9 | 4.79705882e-005 | | |
| 68 | 227.6605298516 | 0.905478178995 1 | | | 88.02199990225 9 | 4.65000000e-005 | | |
| 69 | 227.6605298516 | 0.756257639779 1 | | | 88.91343242873 1 | 4.78314286e-005 | | |
| 70 | 227.6605298516 | 0.597252121449 | | | 88.91343242873 1 | 4.65000000e-005 | | |

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura Main Naval Base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GravPat ... | 3 Time | 3 GravPat ... | 4 Time | 4 ltGravPa... |
|---|---|---|---|---|---|---|---|---|
| 71 | 227.6605298516 | 0.586259397465 6 | | | 91.53363839446 1 | 4.78944444e-005 | | |
| 72 | 227.6605298516 | 0.584142839692 | | | 91.53363839446 1 | 4.65000000e-005 | | |
| 73 | 227.6605298516 | 0.852067140260 3 | | | 92.05824975869 6 | 4.78594595e-005 | | |
| 74 | 227.6605298516 | 58.44997621024 6 | | | 92.05824975869 6 | 4.65000000e-005 | | |
| 75 | 227.6605298516 | 0.577415325002 5 | | | 93.11568329957 4 | 4.78253158e-005 | | |
| 76 | 227.6605298516 | 0.773643111758 | | | 93.11568329957 4 | 4.65000000e-005 | | |
| 77 | 227.6605298516 | 0.496439041555 4 | | | 94.46147845463 1 | 4.77948718e-005 | | |
| 78 | 227.6605298516 | 0.504153954609 8 | | | 94.46147845463 1 | 4.65000000e-005 | | |
| 79 | 227.6605298516 | 0.558705726706 2 | | | 94.93941931559 1 | 4.77650000e-005 | | |
| 80 | 227.6605298516 | 0.271162026873 1 | | | 94.93941931559 1 | 4.65000000e-005 | | |
| 81 | 227.6605298516 | 0.211037280559 5 | | | 95.09935649925 1 | 4.77355954e-005 | | |
| 82 | 227.6605298516 | 0.006589931299 | | | 95.09935649925 1 | 4.65000000e-005 | | |
| 83 | 227.6605298516 | 4.65000000e-005 | | | 96.36131449935 3 | 4.77095238e-005 | | |
| 84 | 228.6313654529 5 | 0.670852285454 4 | | | 96.36131449935 3 | 4.65000000e-005 | | |
| 85 | 228.6313654529 5 | 1.287001747998 7 | | | 98.56871200776 2 | 4.76837209e-005 | | |
| 86 | 228.6313654529 5 | 0.651392304549 2 | | | 98.56871200776 2 | 4.65000000e-005 | | |
| 87 | 228.6313654529 5 | 0.551212658487 | | | 102.4507329940 7 | 4.78590909e-005 | | |
| 88 | 228.6313654529 5 | 0.485097687014 2 | | | 102.4507329940 7 | 4.65000000e-005 | | |
| 89 | 228.6313654529 5 | 0.656011532225 4 | | | 114.8327680568 3 | 4.76355556e-005 | | |
| 90 | 228.6313654529 5 | 0.450193791019 3 | | | 114.8327680568 3 | 4.65000000e-005 | | |
| 91 | 228.6313654529 5 | 0.448709153053 3 | | | 114.9542058965 1 | 4.75130435e-005 | | |
| 92 | 228.6313654529 5 | 0.812255520182 9 | | | 114.9542058965 1 | 4.65000000e-005 | | |
| 93 | 228.6313654529 5 | 0.607752038243 | | | 117.0585087468 8 | 4.75914894e-005 | | |
| 94 | 228.6313654529 5 | 0.411619117108 | | | 117.0585087468 8 | 4.65000000e-005 | | |
| 95 | 228.6313654529 5 | 0.185607310517 9 | | | 122.6009838504 3 | 4.75708333e-005 | | |
| 96 | 228.6313654529 5 | 0.177986418226 5 | | | 122.6009838504 3 | 4.65000000e-005 | | |
| 97 | 228.6313654529 5 | 59.39208811367 6 | | | 125.2080383361 1 | 4.75510204e-005 | | |
| 98 | 228.6313654529 5 | 0.194287259525 4 | | | 125.2080383361 1 | 4.65000000e-005 | | |
| 99 | 228.6313654529 5 | 112.6514047010 3 | | | 125.8048834270 8 | 4.75320000e-005 | | |
| 100 | 228.6313654529 5 | 65.66838635204 7 | | | 125.8048834270 8 | 4.65000000e-005 | | |
| 101 | 228.6313654529 5 | 4.65000000e-005 | | | 129.5465194407 3 | 4.75137255e-005 | | |
| 102 | 230.2146653368 8 | 1.321006157711 2 | | | 129.5465194407 3 | 4.65000000e-005 | | |
| 103 | 230.2146653368 8 | 1.286815402025 9 | | | 139.5471753277 | 4.74851538e-005 | | |
| 104 | 230.2146653368 8 | 1.212994741750 2 | | | 139.5471753277 | 4.65000000e-005 | | |
| 105 | 230.2146653368 8 | 1.150575390268 9 | | | 146.8904500145 3 | 4.74792453e-005 | | |

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura Main Naval Base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 1991 | 346.21104634905 | 156.1145839961 | | | 278.99678910751 | 4.63784918826877 | | |
| 1992 | 346.21104634905 | 182.35041215129 | | | 278.99678910751 | 4.63318602773002 | | |
| 1993 | 346.21104634905 | 2.0810807851145 | | | 278.99678910751 | 4.62653623252216 | | |
| 1994 | 346.21104634905 | 1.9940686550109 | | | 278.99678910751 | 4.62269375888982 | | |
| 1995 | 346.21104634905 | 156.1095384001 | | | 278.99678910751 | 4.61926060898092 | | |
| 1996 | 346.21104634905 | 1.9843395879008 | | | 278.99678910751 | 4.61453672431159 | | |
| 1997 | 346.21104634905 | 2.1757584343258 | | | 278.99678910751 | 4.61453677709625 | | |
| 1998 | 346.21104634905 | 1.7507274780268 | | | 278.99678910751 | 4.61002210341915 | | |
| 1999 | 346.21104634905 | 1.7756146073234 | | | 279.57262048021 | 4.61109832356621 | | |
| 2000 | 346.21104634905 | 1.5119998116699 | | | 279.57262048021 | 4.61256908836022 | | |
| 2001 | 346.21104634905 | 1.5603800308808 | | | 279.57262048021 | 4.610406217972 | | |
| 2002 | 346.21104634905 | 1.3808802547808 | | | 279.57262048021 | 4.61401444124161 | | |
| 2003 | 346.21104634905 | 1.1323001245123 | | | 279.57262048021 | 4.61446628289728 | | |
| 2004 | 346.21104634905 | 1.0224078524057 | | | 279.57262048021 | 4.61496037797873 | | |
| 2005 | 346.21104634905 | 156.0107061223 | | | 279.57262048021 | 4.61524437871303 | | |
| 2006 | 346.21104634905 | 1.2026322761718 | | | 279.57262048021 | 4.61544779973353 | | |
| 2007 | 346.21104634905 | 0.9843535985057 | | | 279.57262048021 | 4.61674566330883 | | |
| 2008 | 346.21104634905 | 0.9555443434466 | | | 279.57262048021 | 4.61692241560059 | | |
| 2009 | 346.21104634905 | 1.7060901179089 | | | 279.57262048021 | 4.61707026208834 | | |
| 2010 | 346.21104634905 | 1.4074619734654 | | | 279.57262048021 | 4.61719284162273 | | |
| 2011 | 346.21104634905 | 0.9934620098544 | | | 279.57262048021 | 4.61728449429469 | | |
| 2012 | 346.21104634905 | 1.8703256997141 | | | 279.57262048021 | 4.61729995285 | | |
| 2013 | 346.21104634905 | 0.8425982954698 | | | 279.57262048021 | 4.61268727271014 | | |
| 2014 | 346.21104634905 | 0.8865235905161 | | | 279.57262048021 | 4.60808379070036 | | |
| 2015 | 346.21104634905 | 0.8319024826262 | | | 279.57262048021 | 4.60348948983155 | | |
| 2016 | 346.21104634905 | 0.755320734428 | | | 279.57262048021 | 4.59890434409213 | | |
| 2017 | 346.21104634905 | 0.7588905283712 | | | 279.57262048021 | 4.59432831787015 | | |
| 2018 | 346.21104634905 | 155.9853842214 | | | 279.57262048021 | 4.58976139994453 | | |
| 2019 | 346.21104634905 | 0.4426655716126 | | | 279.57262048021 | 4.58520355335501 | | |
| 2020 | 346.21104634905 | 0.4635713481903 | | | 279.57262048021 | 4.58065472205208 | | |
| 2021 | 346.21104634905 | 0.2818887570746 | | | 279.57262048021 | 4.57611492396692 | | |
| 2022 | 346.21104634905 | 0.7412875429922 | | | 279.57262048021 | 4.57158411711158 | | |
| 2023 | 346.21104634905 | 0.4375585554353 | | | 279.57262048021 | 4.56706227327789 | | |
| 2024 | 346.21104634905 | 0.8849341778739 | | | 279.57262048021 | 4.56254936568942 | | |
| 2025 | 346.21104634905 | 0.3349332712466 | | | 279.57262048021 | 4.55804563694945 | | |

Extend

File Edit Library Model Text Define Run Window Help

[2832] Jayapura Main Naval Base LAN

| Point Number | 1 Time | 1 Solid Bl... | 2 Time | 2 GrayPat ... | 3 Time | 3 GrayPat ... | 4 Time | 4 ItGrayPa... |
|---|---|---|---|---|---|---|---|---|
| 2026 | 346.21104634905 | 0.3256647505052 | | | 279.57262048021 | 4.5535502547199 | | |
| 2027 | 346.21104634905 | 0.2051466008158 | | | 279.57262048021 | 4.5355503006755 | | |
| 2028 | 346.21104634905 | 0.2052715158519 | | | 279.57262048021 | 4.54806404442216 | | |
| 2029 | 346.21104634905 | 4.66000000e-005 | | | 279.8202446653 | 4.54619957556652 | | |
| 2030 | 346.27694849361 | 0.1558701891058 | | | 279.8202446653 | 4.54931399980161 | | |
| 2031 | 346.27694849361 | 4.66000000e-005 | | | 279.8202446653 | 4.54940644492865 | | |
| 2032 | 348.02127921136 | 1.7100614824802 | | | 279.8202446653 | 4.5494057215752 | | |
| 2033 | 348.02127921136 | 2.1828105786641 | | | 279.8202446653 | 4.54954569995888 | | |
| 2034 | 348.02127921136 | 1.4947208754544 | | | 279.8202446653 | 4.54967880035581 | | |
| 2035 | 348.02127921136 | 1.4799975104874 | | | 279.8202446653 | 4.54059870714024 | | |
| 2036 | 348.02127921136 | 1.4602884833293 | | | 279.8202446653 | 4.53613839940706 | | |
| 2037 | 348.02127921136 | 1.6358841303821 | | | 279.8202446653 | 4.53168883552933 | | |
| 2038 | 348.02127921136 | 1.3560175460286 | | | 279.8202446653 | 4.52724400506626 | | |
| 2039 | 348.02127921136 | 1.1922883188609 | | | 279.8202446653 | 4.52724405074488 | | |
| 2040 | 348.02127921136 | 1.0862100277246 | | | 279.8202446653 | 4.52280922337373 | | |
| 2041 | 348.02127921136 | 1.8783618246032 | | | 281.17536760975 | 4.52412403815586 | | |
| 2042 | 348.02127921136 | 1.0221276842847 | | | 281.17536760975 | 4.52540896092928 | | |
| 2043 | 348.02127921136 | 0.9426194550135 | | | 281.17536760975 | 4.52646589500083 | | |
| 2044 | 348.02127921136 | 0.9565801465737 | | | 281.17536760975 | 4.52747143659948 | | |
| 2045 | 348.02127921136 | 0.9139507076917 | | | 281.17536760975 | 4.52868453031881 | | |
| 2046 | 348.02127921136 | 1.0527762398486 | | | 281.17536760975 | 4.5297473214993 | | |
| 2047 | 348.02127921136 | 0.8213273489055 | | | 281.17536760975 | 4.53068468322679 | | |
| 2048 | 348.02127921136 | 0.9017154097768 | | | 281.17536760975 | 4.53147793368787 | | |
| 2049 | 348.02127921136 | 0.5544662671241 | | | 281.17536760975 | 4.53246481114075 | | |
| 2050 | 348.02127921136 | 0.3595698808965 | | | 281.17536760975 | 4.53315193077787 | | |
| 2051 | 348.02127921136 | 0.3182187929405 | | | 281.17536760975 | 4.53409924262273 | | |
| 2052 | 348.02127921136 | 0.3071654925716 | | | 281.17536760975 | 4.53457288948884 | | |
| 2053 | 348.02127921136 | 0.2371295109166 | | | 281.17536760975 | 4.53531993051199 | | |
| 2054 | 348.02127921136 | 0.2385183156425 | | | 281.17536760975 | 4.53576528584422 | | |
| 2055 | 348.02127921136 | 0.2215857797876 | | | 281.17536760975 | 4.53673100300778 | | |
| 2056 | 348.02127921136 | 0.0762076603327 | | | 281.17536760975 | 4.53713803054402 | | |
| 2057 | 348.02127921136 | 0.0516925553205 | | | 281.17536760975 | 4.53747517388602 | | |
| 2058 | 348.02127921136 | 4.66000000e-005 | | | 281.17536760975 | 4.53782042286485 | | |
| 2059 | 350 | 4.66000000e-005 | | | 281.17536760975 | 4.53810692429273 | | |
| 2060 | | | | | 281.17536760975 | 4.53837410854483 | | |

Run 3, Data Delay within the 6th LAN

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